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IN THE  
**Supreme Court of the United States**

October Term, 1978

—•—  
No. **78-84**

—•—  
CLEVELAND ELECTRIC ILLUMINATING CO., et al.,  
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION  
AGENCY, et al.,  
Respondents.

—•—  
PETITION FOR A WRIT OF CERTIORARI  
TO THE UNITED STATES COURT OF APPEALS  
FOR THE SIXTH CIRCUIT

Of Counsel:

FULLER, HENRY, HODGE  
& SNYDER  
1200 Edison Plaza  
300 Madison Avenue  
P.O. Box 2088  
Toledo, Ohio 43603

C. Randolph Light  
Louis E. Tosi  
Michael E. McConnell  
1200 Edison Plaza  
300 Madison Avenue  
P.O. Box 2088  
Toledo, Ohio 43603  
Telephone: (419) 255-8220

Attorneys for Petitioners

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CLEVELAND ELECTRIC ILLUMINATING CO., et al.,  
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION  
AGENCY, et al.,  
Respondents.

**PETITION FOR A WRIT OF CERTIORARI  
TO THE UNITED STATES COURT OF APPEALS  
FOR THE SIXTH CIRCUIT**

Petitioners respectfully pray that a writ of *certiorari* issue to review the judgment and opinion of the United States Court of Appeals for the Sixth Circuit entered in this proceeding on February 13, 1978.\*

\* This petition is filed on behalf of The Cincinnati Gas and Electric Company, The Cleveland Electric Illuminating Company, Columbus and Southern Ohio Electric Company, The Dayton Power and Light Company, Ohio Edison Company, Pennsylvania Power Company and The Toledo Edison Company, all of whom were petitioners in Case Nos. 76-2090 and 77-1367 below.



### OPINION BELOW

The opinion of the Sixth Circuit, officially reported at 572 F.2d 1150, is reproduced from the Slip Opinion as Appendix A hereto. That opinion is unofficially reported at 11 ERC 1288 and 2 CCH PCG Paragraph 40,140.

### JURISDICTION

The judgment of the Sixth Circuit was entered on February 13, 1978 and is appended hereto as Appendix B. On February 27, 1978, Petitioners and others filed with the appellate court a petition for rehearing and suggestion for rehearing *en banc*. The court denied the petition and suggestion on April 18, 1978 (Appendix C). This petition for *certiorari* was filed within 90 days of that date. This court's jurisdiction is invoked under 28 U.S.C. § 1254(1) (1970).

### QUESTIONS PRESENTED

1. Whether the Sixth Circuit met the "arbitrary and capricious" standard of judicial review when without contemporaneous agency explanations of reliability, the court approved by *post hoc* rationalizations an air quality dispersion model of the United States Environmental Protection Agency, which contains unrealistic assumptions, overpredicts sulfur dioxide ambient air concentrations and sets emission limitations of tremendous costs to Petitioners and the State of Ohio?

2. Whether the United States Environmental Protection Agency acted arbitrarily and capriciously and in contravention of the Clean Air Act when it used an air quality dispersion model of undetermined validity to promulgate a sulfur dioxide implementation plan for the State of Ohio and did not consider fully the economic and technological feasibility of the plan?

3. Whether the United States Environmental Protection Agency acted arbitrarily and capriciously and contrary to the Fifth Amendment's due process prohibition on vagueness when it promulgated a sulfur dioxide implementation plan for the State of Ohio, which requires an immediate selection of a compliance means and schedule, imposes severe civil and criminal penalties for compliance schedule violations, but fails to specify, leaving to later rulemaking, an integral component of the plan needed to make an informed choice of compliance means and to obtain knowledge of prohibited conduct?

### CONSTITUTIONAL PROVISION, STATUTES, AND REGULATIONS INVOLVED

The Clean Air Act, as amended by the Clean Air Act Amendments of 1970, 91 Pub. L. No. 604, 84 Stat. 1676 (formerly codified at 42 U.S.C. §§ 1857 *et seq.* (1970)), was in effect at the time the regulations being reviewed were promulgated and petitions for review were filed with the Sixth Circuit. Relevant provisions of 42 U.S.C. §§ 1857 *et seq.* (1970) are set forth in Appendix D hereto. The pertinent provision of the Administrative Procedure Act, 5 U.S.C. § 706(2) (1970), is set forth as

Appendix E hereto. Certain relevant provisions of the Clean Air Act, as amended by the Clean Air Act Amendments of 1977, 95 Pub. L. No. 95, 91 Stat. 685 (42 U.S.C.A. §§ 7401 *et seq.* (Supp. 1977)) are set forth in Appendix F hereto. The Fifth Amendment to the Constitution of the United States is set forth as Appendix G hereto. The regulations being reviewed, 40 C.F.R. §§ 52.1875, 52.1881 and 52.1882 (1977), are set forth in Appendix H hereto. Related EPA regulations appearing at 40 C.F.R. §§ 60.45 and 60.46 (1977) are appended hereto as Appendix I. A related EPA policy statement of February 15, 1978, 43 *Fed. Reg.* 6646 (1978), is appended hereto as Appendix J.

## STATEMENT OF THE CASE

### A. Nature of the Case

Petitioners are electric utilities serving the individual, commercial, and industrial consumers of electric power in the major urban areas of Ohio. In this proceeding, they are subject to the first major, statewide implementation plan for a criteria pollutant promulgated by the United States Environmental Protection Agency ("EPA" or "Agency") under the Clean Air Act. In addition, the plan represents EPA's first widespread use of a regulatory methodology called dispersion prediction modeling. EPA utilized this methodology as the sole means for determining the sulfur dioxide ("SO<sub>2</sub>") emission limitations to be imposed upon the coal-fired boilers of Petitioners.

The action of EPA involves "enormous financial stakes" (Appendix A, p. 46). EPA estimates "capital costs for Ohio industry of well over half a billion dollars

and annual costs of 171 million dollars" (Appendix A, p. 50). These significant costs will surge across Ohio, increasing electric rates, the cost of goods and services, and unemployment. Additionally, the plan may render substantial portions of Ohio's coal reserves unavailable to the utilities as a source of energy.

Juxtaposed against these extraordinary costs is EPA's reliance on an unproven methodology. Rather than employ monitored air quality data in developing emission limitations for Petitioners, EPA used a mathematical model called the Real-Time Air-Quality Simulation Model ("RAM"). Although selected as a proxy for empirical data, RAM was never validated or otherwise confirmed reliable by the Agency.

### B. History of the Case

After the State of Ohio twice withdrew an implementation plan for SO<sub>2</sub>, EPA proposed in November, 1975, and ultimately promulgated in August, 1976, the regulations in dispute. Major differences in methodology and Agency considerations existed between the proposed and promulgated regulations.

Because of these differences, Petitioners and others filed petitions for review with the Sixth Circuit pursuant to § 307(b) (1) of the Clean Air Act (42 U.S.C. § 1875h-5(b) (1) (1970); Appendix D, pp. 81-82) and requested a stay of the August, 1976, regulations pending judicial review. On November 12, 1976, the Sixth Circuit granted the stay and *sua sponte* remanded the regulations for further consideration.

On May 31, 1977, EPA repromulgated the plan. While it made some minor modifications, it did not change

the methodology, and Petitioners again filed petitions for review with the Sixth Circuit under § 307(b) (1) (42 U.S.C. § 1857h-5(b) (1) (1970); Appendix D, pp. 81-82) of the Clean Air Act. The appellate court consolidated these petitions with the earlier petitions of Petitioners; and on February 13, 1978, after receipt of post-argument memoranda from the parties, it issued an opinion on the "major general issues", leaving to later opinions the remaining questions (Appendix A, pp. 19-20).\*

In its decision, the Sixth Circuit explicitly approved EPA's use of RAM as a means to determine emission limitations. Although it expressed reservations about its authority to review the economic and technological feasibility of the plan, it observed, nonetheless, that these features of the plan were reasonable. In addition, it struck down *sub silentio* Petitioners' due process claim based on the ambiguous compliance scheme of the plan.

The State of Ohio appears to be EPA's initial testing ground for its use of RAM. EPA, though, has never validated the reliability of the model even though its own guidelines state that "validation - calibration is required". EPA's *Guidelines for Air Quality Maintenance Planning and Analysis Vol. 12: Applying Atmospheric Simulation Models to Air Quality Maintenance Areas*, 11-12 (Sept. 1974) (Rpt. No. EPA-450/4-74-013).

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\*On June 29, 1978 the Sixth Circuit entered a second opinion and judgment in the present and related cases on several of the unresolved issues (Appendix K). This opinion may warrant a further petition for writ of *certiorari* by Petitioners. The court on June 29 also responded to Petitioners' motion for clarification of the opinion and judgment of February 13, the subject of the present petition for writ of *certiorari* (Appendix L). In its ruling on the motion, the court enumerated the issues disposed of by its two opinions.

This failure of EPA is significant not only because of the newness of the model but also because of two other factors. One, studies of RAM and comparisons between its prediction results and known air quality indicate that it systematically overpredicts SO<sub>2</sub> concentrations in Ohio. Two, RAM contains two unrealistic assumptions. First, the model is "operated on the assumption that the plants concerned operate 24 hours a day at full [boiler design] capacity" (Appendix A, p. 39). Neither Petitioners nor any of the sources modeled, however, ever run at these rates every hour of every day. Second, the model utilizes vertical dispersion coefficients, which purport to predict how plumes released from utility stacks disperse to ground levels in urban areas. The study from which these coefficients were derived, though, states that they are based on short stack emissions and are inapplicable to the taller stacks of Petitioners.

The Court of Appeals cited eight reasons in approving EPA's use of RAM (Appendix A, pp. 42-49). Most of these reasons are inapposite; and not one discusses, nor does the court's opinion elsewhere examine, the propriety of the maximum operating rate assumption and the vertical dispersion coefficients.

Of the eight reasons, only three pertain to the accuracy of RAM. The first involves comparisons by the Sixth Circuit itself of the relative stringency of the EPA plan and the two previously promulgated, but abandoned plans of the State of Ohio. (Appendix A, pp. 43-45). Even the court concedes that the "comparisons do not, of course, necessarily demonstrate RAM's accuracy" (Appendix A, p. 44). Also, contrary to the conclusion of the court, the comparisons do not tend to show that the choice of RAM by EPA lay within its administrative discretion (Appendix A, p. 44). This



is so because under § 116 of the Clean Air Act a state may, which EPA cannot, promulgate emission limitations more stringent than necessary to meet the national ambient air quality standards. 42 U.S.C.A. § 7416 (Supp. 1977).

The second reason concerns the "Dayton Study" (Appendix A, pp. 47-49). This "study", however, is no study at all but is merely an assortment of several bits of data pulled from diverse parts of the exceedingly voluminous administrative record. These tabulations include no expression of Agency opinion, explanation, or analysis as to their relevance or as to the correctness of RAM. Rather than relying on contemporaneous agency evaluation, the Sixth Circuit substituted its own judgment of the data. The court admits that the data does not show RAM's predictive perfection, but it asserts that "it certainly tends to show that the EPA's use of RAM, if conservative, cannot be held to be arbitrary and capricious" (Appendix A, p. 48). A model, however, which contains the unrealistic maximum operating rate assumption and the inapplicable vertical dispersion coefficients of RAM is not being used conservatively and fairly to compensate for its lack of reliability.

EPA did not formulate the Dayton Study until after the close of the record and until briefing had begun. In response to Petitioners' claim that the study was an impermissible *post hoc* rationalization of EPA counsel, the court merely stated that the raw data in the study had been available in the administrative record of the case (Appendix A, p. 48 n.4). EPA, however, had not produced the data used in the purported study in response to an earlier Freedom of Information Act request from Petitioners for "data summaries" which

related "to the comparison of RAM prediction modeling results with ambient air quality measurements."\*

The final reason given by the Court of Appeals for EPA's use of RAM does not support the model's accuracy, but rather attempts to excuse its unreliability. The court stated that even if RAM did overpredict, this characteristic would be valid under § 110(a) (2) (B) of the Clean Air Act (42 U.S.C. § 1857c-5(a) (2) (B) (1970); Appendix D, p. 77), which requires that emission limitations "insure" attainment of the national ambient air quality standards (Appendix A, p. 49). This justification by the court of RAM's use by EPA begs the question. It attempts to avoid in the guise of public health the necessary showing from EPA that it has acted within the scope of its delegated authority and utilized a model based on rational assumptions and vested with requisite reliability.

In addition to upholding RAM, the Sixth Circuit observed in its opinion that EPA had compiled an administrative record which disclosed the economic and technological feasibility of its Ohio SO<sub>2</sub> plan (Appendix A, pp. 50-51). EPA, however, has openly admitted that it did not consider the substantial impact of the sulfur variability of coal on its cost analysis (Cert. Index to Rec., XIV B). This omission reduces the expected supply of complying coal and places many facilities originally thought to be in compliance, out of compliance.

Unlike a manufactured commodity which can be processed to have generally uniform properties, coal is a natural resource whose sulfur content, ash content, heating value and other characteristics vary

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\* Exhibit C, pp. 4 and 2 respectively, of certain Petitioners' motion of December 14, 1977 to supplement the record.

considerably from one reserve to another and usually within a reserve. Although acknowledging its failure to weigh the cost impact of sulfur variability, EPA glossed over its inadequate analysis by asserting in its supplemental technical support document to the Ohio plan that it is not legally obligated to review the economic and technological feasibility of a federally promulgated implementation plan. The Sixth Circuit did not rule to the contrary.

In its opinion, the Sixth Circuit stated that it had addressed only the "material" issues presented to it (Appendix A, p. 52). It ignored, however, a significant issue raised by Petitioners as to the ambiguity of the compliance scheme contained in EPA's plan.\*

The plan specifically obligates Petitioners to certify compliance or to adhere to compliance schedules which require them to make irrevocable, progressive commitments to a selected means of compliance (40 C.F.R. § 52.1882(b) (1977); Appendix H, pp. 211-215). The severe civil and criminal penalties of the Clean Air Act attach to violations of the certifications and the schedules; and, indeed, mandatory enforcement proceedings may be required against Petitioners as major stationary sources for these violations (§ 113(b) of the Clean Air Act, 42 U.S.C.A. § 7413(b) (Supp. 1977); Appendix F, p. 93-95).

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\*The June 29, 1978 ruling of the Sixth Circuit on Petitioners' motion to clarify the opinion and judgment of February 13, 1978 does not rectify this omission in the opinion. The court miscomprehends the compliance scheme of EPA's plan, as shown in its ruling when it interrelates compliance with the use of an air quality dispersion model. The reliability of a model employed to establish emission limitations is a separate and distinct matter from the ambiguity of the compliance scheme.

A critical factor in the compliance determination process is the sulfur content of fuels. The plan provides that the test methods for determining fuel sulfur content are those specified in 40 C.F.R. § 60.45 (1977). Such sampling methods, though, are yet to be promulgated. See 40 C.F.R. § 60.45(2) (d) (1977); Appendix I, p. 217. Without knowledge of these methods, Petitioners cannot make a reasoned assessment of the possible means of compliance, select the least onerous of those available, and knowingly avoid unlawful conduct.

In its post-argument memorandum requested by the appellate court, EPA attempted to rectify this fatal defect in its plan. It unilaterally announced, and later published in the *Federal Register*, 43 *Fed. Reg.* 6646 (Feb. 15, 1978), a policy statement on fuel sampling (Appendix J., pp. 218-219). The statement was made and published without benefit of public comment and modified the Ohio plan. The statement provides that the only permissible compliance method is a stack gas test performed on fuel as burned and that the sampling of the sulfur content of fuels, which occurs before burning, is not an assured means of compliance. Petitioners, therefore, cannot know with any degree of reasonableness that they have purchased complying coal until the fuel is consumed and the point of possible violation has been passed.

Both the required stack gas test and the revocable fuel sampling method announced by EPA are based on averaging times of 24 hours or less. EPA concedes that it developed its emission limitations on the long term fuel averages of the sources modeled. An inconsistency between the long term emission limitations and the short term compliance methods, therefore, exists, resulting in the emission limitations through the



enforcement scheme of the Ohio plan becoming more stringent than necessary to attain and preserve the national ambient air quality standards.

In short, the Sixth Circuit simply has not addressed the pivotal issues raised in its opinion of February 13, 1978. The court has completely abdicated the prerogative of judicial review and insistence on rational agency action. Its decision is a foreboding precedent for future court review of the continually expanding and increasingly complex administrative regulation of our environment.

#### REASONS FOR GRANTING THE WRIT

##### A. The Decision Below Conflicts with Decisions of this Court and of Other Circuits.

The admonition of this Court in *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402 (1971), that courts engage in a searching inquiry of the record to determine the rationality of administrative action is a particularly compelling and fundamental rule in review of EPA actions. Since the result of § 307(b) (2) (formerly 42 U.S.C. § 1857h-5(b) (2) (1970), Appendix D, p. 82; presently 42 U.S.C.A. § 7607(b) (2) (Supp. 1977), Appendix F, p. 98) of the Clean Air Act is to cut off issues from district court review once subject to circuit court examination, it is imperative that careful deliberation rather than conclusory results be the hallmark of appellate court decision in environmental cases.

In this case, that searching inquiry should have been directed toward finding an EPA determination that

RAM was reasonably reliable. Other circuits have insisted on no less when considering use of prediction methodology by EPA, and have demanded that EPA's technical conclusions no less than others "[be] founded on supportable data and methodology", *South Terminal Corp. v. EPA*, 504 F.2d 646, 655 (1st Cir. 1974); that EPA make a showing of reliability of the methodology of prediction when prediction is being used to overcome actual measured data, *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 647-648 (D.C. Cir. 1973); and that an administrative agency "in the absence of empirical confirmation of accuracy, \* \* \* is obligated to provide a complete analytical defense to its model", *American Public Gas Ass'n. v. FPC*, 567 F.2d 1016, 1039 (D.C. Cir. 1977).

The Sixth Circuit breached these requirements in approving EPA's use of RAM. It did not uphold the model on any Agency showing. It sustained the model on its prepared, irrelevant comparison of federal and withdrawn state regulations, a *post hoc* rationalization of EPA counsel in the Dayton Study and its own makeweight argument based on § 110(a) (2) (B) of the Clean Air Act.

While repeating the standard of judicial review announced by this Court in *Overton Park*, the Sixth Circuit, nonetheless, has disregarded it. It has given EPA greater deference and demanded far less by way of record justification for prediction methodology than other courts of appeals confronted with similar issues. The Sixth Circuit has, in effect, relaxed the standard of review in a manner making its decision wholly inconsistent with those of this Court and other appellate courts.

Because of the ever-increasing utilization and importance of modeling as a regulatory tool, it is urgent that this Court direct that its use always meet the test of rationality. Prediction modeling will be the pre-eminent regulatory technique for permitting, licensing, and establishing emission standards in the future. Two highly important and critical EPA programs — prevention of significant deterioration and revision of implementation plans in nonattainment areas — will depend heavily on modeling. EPA's recently promulgated regulations on prevention of significant deterioration incorporate modeling guidelines which specify RAM as an approved EPA technique for evaluating new sources. See 43 Fed. Reg. 26380, 26386 (June 19, 1978), promulgating 40 C.F.R. § 51.24(m). Also, EPA's guidelines to the states relating to the revision of implementation plans under § 172 of the Clean Air Act, as amended by the Clean Air Act Amendment of 1977, 42 U.S.C.A. § 7502 (Supp. 1977), incorporate heavy reliance on modeling, including RAM. See *EPA Workshop on Requirements for Non-attainment Area Plans*, Feb.-March, 1978. As with previous EPA guidelines, states can be expected to rely on these pronouncements.

Because of its expected use with respect to evaluating proposed new source construction under new source review and significant deterioration regulations, modeling will govern to a large extent land use and economic growth of the nation and result in immediate expenditures by sources throughout the nation. If wrongly used, it can needlessly prevent industrial and utility growth in many areas of the country or impose enormous, unnecessary costs through requiring control

devices not needed for the public good or for the attainment and maintenance of national ambient air quality standards. Courts should be directed to ensure, which the Sixth Circuit did not, that modeling is always rationally supported by record evidence of its reasonableness and reliability.

**B. The Sixth Circuit Has Improperly Decided an Important Question of Federal Law Which Has Not Been, But Should Be, Settled by this Court.**

In *Union Electric Co. v. EPA*, 427 U.S. 246 (1976), rehearing denied, 429 U.S. 873 (1976), this Court raised but left unanswered the question whether EPA must consider claims of economic and technological infeasibility when it promulgates an implementation plan for a state. It held that EPA need not examine claims of economic and technological infeasibility when weighing approval of an implementation plan submitted by a state, but expressly excluded from its review a federally promulgated implementation plan. See 427 U.S. at 261 n.7.

As this Court noted in *Union Electric Co. v. EPA*, 427 U.S. at 261 n.7, one appellate court has remanded to EPA certain of its own promulgated regulations for consideration of their "cost factors as related to anticipated benefits", and another has stated that EPA must consider economics in its selection of control strategies. *District of Columbia v. Train*, 521 F.2d 971, 997 (D.C. Cir. 1975), vacated on other grounds sub nom, *EPA v. Brown*, 431 U.S. 99 (1977); and *South Terminal Corp. v. EPA*, 504 F.2d at 675 (1st Cir. 1974) respectively. In addition to being considered in these ways, the costs of

a federally promulgated plan are also a relevant factor in determining the possible arbitrary action of EPA in employing an unvalidated dispersion model contrary to its own guidelines and without a showing of reliability. The necessity of using such a model must be weighed against its potential harm, and pertinent to this balancing process is the resulting economic impact.

Although it is undisputed that the financial stakes in this case are enormous, EPA admits that its determination of costs would be even higher if it had fully considered the pertinent factor of the sulfur variability of coal. By concluding, however, that the record supports the economic and technological reasonableness of the control strategies promulgated by EPA, the Sixth Circuit not only reiterated the error of EPA in neglecting the significant cost impact of the sulfur variability in coal, but also it avoided directing EPA to assess the costs of its promulgated plan against its anticipated benefits or in any other fashion. This incongruous result cannot be allowed to stand in light of the possible restrictions placed on later judicial review by § 307(b) (2) of the Clean Air Act (42 U.S.C.A. § 7607 (b)(2) (Supp. 1977); Appendix F, p. 98)

### **C. The Decision Below Deprives Petitioners of Due Process of Law.**

The Ohio plan promulgated by EPA breaches an elementary principle of due process of law. It patently fails to give fair notice of prohibited conduct.

The Sixth Circuit either ignored or failed to comprehend the impact of the enforcement scheme of EPA's plan. The regulation compels immediate steps toward compliance, but is ambiguous as to how compliance is to be determined. It does not make known the prescribed method for ascertaining fuel sulfur content, information needed to make an intelligent assessment of alternative compliance strategies and to know and to avoid forbidden conduct.

The regulation compels compliance expenditures of millions of dollars and imposes severe civil and criminal punishments for noncompliance. Its compliance scheme, though, is standardless, inviting, if not encouraging, unequal application. See *South Terminal Corp. v. EPA*, 504 F.2d at 670. Lacking the requisite specificity, it fails to satisfy the criteria of § 110 of the Clean Air Act, especially that of § 110(a) (2) (D), (42 U.S.C. § 1857c-5(a) (2) (D) (Supp. 1977); Appendix D, p. 78), constitutes unlawful arbitrary agency action proscribed by the Administrative Procedure Act, and, most particularly, violates the due process prohibition of vagueness inherent in the Fifth Amendment to the United States Constitution.

## CONCLUSION

The Sixth Circuit has acknowledged that this case involves "important public questions" (Appendix A, p. 52). The action of EPA in promulgating a sulfur dioxide plan for the State of Ohio impacts in innumerable ways not only on the citizens of this state but also on the public nationwide through other regulatory uses of RAM and comparable models. Special and important reasons exist for the granting of this petition for writ of *certiorari*.

Respectfully submitted,

C. Randolph Light  
Louis E. Tosi  
Michael E. McConnell  
1200 Edison Plaza  
300 Madison Avenue  
P.O. Box 2088  
Toledo, Ohio 43603

*Attorneys for Petitioners*

Of Counsel:

FULLER, HENRY, HODGE  
& SNYDER  
1200 Edison Plaza  
300 Madison Avenue  
P.O. Box 2088  
Toledo, Ohio 43603

## APPENDIX A

## OPINION

(United States Court of Appeals  
For the Sixth Circuit)

Cleveland Electric Illuminating Co., et al.  
v. Environmental Protection Agency, et al.

Nos. 76-2090; 77-1367; 76-2225, 77-1366;  
76-2240, 77-1355; 76-2242, 77-1359;  
76-2244, 77-1363; 76-2276, 77-1368.

(Decided and Filed February 13, 1978)

Before: PHILLIPS, Chief Judge, EDWARDS and  
PECK, Circuit Judges.

EDWARDS, Circuit Judge. This court now has before it 23 petitions involving 32 companies filed against the United States Environmental Protection Agency which levy a variety of complaints against the federal agency's imposition of a sulfur dioxide (SO<sub>2</sub>) pollution control plan for industrial discharges into Ohio's ambient air. The issues, which have been extensively briefed and argued, divide into general legal and procedural complaints which might be applicable to any one of the petitioners and a wider variety of specific complaints about the application of the EPA controls to particular power-generating or industrial plants. The cases dealt with in this opinion<sup>1</sup> present the major general issues.

<sup>1</sup> This decision dismisses the objections to the regulations that apply to the following facilities:

- (a) Cleveland Electric Illuminating Co. — all facilities.
- (b) Dayton Power & Light Co. — Montgomery County facilities only.

(continued on following page)



Other individual cases, in addition to presenting one or more of the general issues, also present specific issues of fact. These are reserved pending a review of and reports on the factual disputes between the United States EPA and the individual petitioners.

The major issues dealt with in this opinion are: 1) intervenor, the State of Ohio, claims that this court should disapprove the federal plan as irrational and arbitrary and rely upon Ohio to come forward with a more rational plan sometime in the future; 2) petitioners claim that the EPA SO<sub>2</sub> plan should be remanded for hearings because the informal rulemaking hearings employed by EPA under 5 U.S.C. § 553 (1970 & Supp. V 1975) were inadequate; and 3) petitioners claim that the major model employed by the United States Environmental Protection Agency in establishing specific emission limitations for particular plans is invalid both intrinsically and as applied. This model is termed the "Real-Time Air-Quality-Simulator Model" (hereinafter RAM).

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- (c) Ohio Edison Co. — Lorain County facilities only.
- (d) Toledo Edison Co. — all facilities.
- (e) The Timkin Co. — all steam generating units.
- (f) White-Westinghouse Corp. — all facilities. (Although there was some confusion on this point in the briefs, the record makes clear that White-Westinghouse's Franklin County facility is subject to the RAM model. See EPA Final Technical Support Document at IV-57.
- (g) Standard Oil Co. of Ohio — Lucas County steam generating units.
- (h) Interlake, Inc. — all steam generating units.
- (i) Coulton Chemical Corp. — all steam generating units.

## THE HISTORY OF THIS LITIGATION

The United States Congress has been wrestling with the problem of pollution of the ambient air since 1955. See Act of July 14, 1955, Pub. L. No. 84-159, 69 Stat. 622. The original act has now been amended many times. It now is cited as the Clean Air Act and has been codified in 42 U.S.C. §§ 1857-1857(1) (1970 & Supp. V 1975).<sup>2</sup>

The prior history of litigation concerning sulfur dioxide emission controls in this court is set forth in *Buckeye Power, Inc. v. EPA*, 481 F.2d 162 (6th Cir. 1973) (*Buckeye Power #1*) and *Buckeye Power, Inc. v. EPA*, 525 F.2d 80 (6th Cir. 1975) (*Buckeye Power #2*).

National air quality standards for sulfur dioxide, one of the most important pollutants of the ambient air, were set by EPA in 1973 as follows:

### § 50.4 National primary ambient air-quality standards for sulfur oxides (sulfur dioxide).

The national primary ambient air quality standards for sulfur oxides measured as sulfur

<sup>2</sup> The Clean Air Act was originally enacted in 1963, Pub. L. No. 88-206, 77 Stat. 392. It was amended in relatively minor ways three times during the following six years. Pub. L. No. 89-272, 79 Stat. 992 (1965); Pub. L. No. 89-675, 80 Stat. 954 (1966); Pub. L. No. 90-148, 81 Stat. 485 (1967).

The Act's present form, however, is derived from amendments adopted in 1970 and subsequently. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676, as amended, Pub. L. No. 92-157, 85 Stat. 464 (1971); Pub. L. No. 93-319, 88 Stat. 246 (1974); Pub. L. No. 95-95, 91 Stat. 685 (1977).

The Act is being recodified as 42 U.S.C. §§ 7401-7626.



dioxide by the reference method described in Appendix A to this part, or by an equivalent method, are:

(a) 80 micrograms per cubic meter (0.03 p.p.m.) — annual arithmetic mean.

(b) 365 micrograms per cubic meter (0.14 p.p.m.) — Maximum 24-hour concentration not to be exceeded more than once per year.

**§ 50.5 National secondary ambient air quality standards for sulfur oxides (sulfur dioxide).**

The national secondary ambient air quality standard for sulfur oxide measured as sulfur dioxide by the reference method described in Appendix A to this part, or by any equivalent method is 1,300 micrograms per cubic meter (0.5 p.p.m.) maximum 3-hour concentration not to be exceeded more than once per year.<sup>3</sup>

Ambient Air Standards (Primary & Secondary), 40 C.F.R. §§ 50.4, 50.5 (1976).

The federal Clean Air Act program which produced these standards is based primarily upon the adverse effect which air pollution has upon human life and health.

Acute episodes of high pollution have clearly resulted in mortality and morbidity. Often the effects of high pollutant concentrations in these episodes have been combined with other

<sup>3</sup> The EPA plan for Ohio presently under consideration contains no separate implementation plan for secondary air quality standards. This issue is raised in the petition of the Northern Ohio Lung Association and will be considered and decided subsequently.

environmental features such as low temperatures or epidemic diseases (influenza) which may in themselves have serious or fatal consequences. This has sometimes made it difficult to determine to what extent pollution and temperature extremes are responsible for the effects. Nevertheless, there is now no longer any doubt that high levels of pollution sustained for periods of days can kill. Those aged 45 and over with chronic diseases, particularly of the lungs or heart, seem to be predominantly affected. In addition to these acute episodes, pollutants can attain daily levels which have been shown to have serious consequences to city dwellers.

\* \* \*

There is a large and increasing body of evidence that significant health effects are produced by long-term exposures to air pollutants. Acute respiratory infections in children, chronic respiratory diseases in adults, and decreased levels of ventilatory lung function in both children and adults have been found to be related to concentrations of SO<sub>2</sub> and particulates, after apparently sufficient allowance has been made for such confounding variable as smoking and socioeconomic circumstances.

Rall, *Review of the Health Effects of Sulfur Oxides*, 8 Env'tal Health Perspectives 97, 99 (1974).

It appears that present national air quality standards have been set with little or no margin of safety. Adverse health effects are set forth in the two following charts; and the minimal or nonexistent margins of safety are vividly portrayed below:

TABLE 1.—EFFECTS THRESHOLD, BEST CHOICE SIGNIFICANT RISK LEVELS AND SAFETY MARGINS CONTAINED IN PRIMARY AMBIENT AIR QUALITY STANDARDS

Pollutant	Lowest best judgment estimate for effects threshold and best choice for significant risk levels		Adverse health effect		U.S. primary air quality standard	Margin of safety <sup>a</sup> (percent)
	Concentration	Averaging time				
Sulfur dioxide	300 to 400 ug/m <sup>3</sup>	24 hour	Mortality increase		365 ug/m <sup>3</sup>	None
Total suspended particulates	91 ug/m <sup>3</sup>	Annual	Increased frequency of acute respiratory disease		80 ug/m <sup>3</sup>	14
	250 to 300 ug/m <sup>3</sup>	24 hour	Mortality increase		260 ug/m <sup>3</sup>	None
Suspended sulfates	70 to 250 ug/m <sup>3</sup>	do	Aggravation of respiratory disease		260 ug/m <sup>3</sup>	None
	100 ug/m <sup>3</sup>	Annual	Increased frequency of chronic bronchitis		75 ug/m <sup>3</sup>	33
Nitrogen dioxide	15 ug/m <sup>3</sup>	24 hour	Increased infections in asthmatics		None	None
	140 ug/m <sup>3</sup>	Annual	Increased lower respiratory infections in children		None	None
Carbon monoxide	23 ug/m <sup>3</sup>	8 hour	Increased severity of acute respiratory illness in children		100 ug/m <sup>3</sup>	48
	73 ug/m <sup>3</sup>	1 hour	Diminished exercise tolerance in heart patients		40 ug/m <sup>3</sup>	130
Photochemical oxidants	200 ug/m <sup>3</sup>	do	Diminished exercise tolerance in heart patients		40 ug/m <sup>3</sup>	82
			Increased susceptibility to infection		160 ug/m <sup>3</sup>	25

<sup>a</sup> Safety margin equals effects threshold minus standard divided by standard X 100.

<sup>aa</sup> Safety margins based upon carboxyhemoglobin levels would be 100 percent for the 8 hour standard and 67 percent for the 1 hour standard.

TABLE 2.—THRESHOLD AND ILLUSTRATIVE HEALTH RISKS FOR SELECTED AMBIENT LEVELS OF SUSPENDED SULFATES

Adverse health effect	Threshold concentration and exposure duration	Illustrative health risk	
		Level	Sulfur dioxide equivalent
Increase in daily mortality	25 ug/m <sup>3</sup> for 24 hr or longer	2 1/2 percent increase in daily mortality	38 ug/m <sup>3</sup> for 24 hr
Aggravation of heart and lung disease in the elderly	9 ug/m <sup>3</sup> for 24 hr or longer	50 per cent increase in symptom aggravation	600 ug/m <sup>3</sup> for 24 hr
Aggravation of asthma	6 to 10 ug/m <sup>3</sup> for 24 hr	75 percent increase in frequency of asthma attacks	750 ug/m <sup>3</sup> for 24 hr
Excess acute lower respiratory disease in children	13 ug/m <sup>3</sup> for several yr	50 percent increase in frequency	450 ug/m <sup>3</sup> for 24 hr
Excess risk for chronic bronchitis	10 to 15 ug/m <sup>3</sup> for up to 10 yr	50 percent increase in risk	100 to 250 ug/m <sup>3</sup> annual average
			100 to 250 ug/m <sup>3</sup> annual average

120 CONG. REC. 18973 (1974) (report of Drs. Finklea, Hammer & Cole).

The major source of sulfur dioxide pollution of the ambient air are coal-fired plants — exemplified by power plants operated by some of the petitioners in this case.

Two other facts should be added from the extensive technical record in this case before we turn to the specific legal issues. The first is that sulfur dioxide emitted from plant stacks reacts with other elements in the atmosphere to form sulfuric acid mist and various suspended sulfates which are in fact the irritants which adversely affect human health. T. Lewis, M. Amdur, M. Fritzhand & K. Campbell, *Toxicology of Atmospheric Sulfur Dioxide Decay Products* 17 (1972).

The second important fact is that these derivatives from sulfur dioxide tend to be airborne for days. They affect areas at great distances downward, even when in the original sulfur dioxide form they were emitted from a high power plant stack. Rall, *Review of the Health Effects of Sulfur Oxides*, 8 *Env'tal Health Perspectives* 97, 106 (1974).

The cases considered in this opinion represent the fourth time this sulfur dioxide control problem has been before this court. In the instant cases a hearing was held November 14, 1976, at which numerous arguments were advanced concerning petitioners' claims that they had been deprived of an adequate opportunity to comment upon the EPA sulfur dioxide standards. In particular they complained about not having an opportunity in advance to comment upon the EPA's use of the RAM model. The hearing resulted in the entry of an order by this court remanding all of these petitions to the EPA for reopening of the record to allow presentation of additional objections, corrections, and

comment. The order provided in part as follows:

On receipt and consideration of the thirty-six (36) above-styled petitions for review attacking the emission standards for the State of Ohio applicable to sulphur dioxide (SO<sub>2</sub>) promulgated by respondents Environmental Protection Agency (EPA) and Train on August 27, 1976; and

On receipt and consideration of respondent's motion to consolidate such petitions for hearing — and certain petitioners' objections thereto — and said motion to consolidate having been granted by this Court; and

On receipt and consideration of certain petitioners' motions for stay of the respondent's orders pending this Court's review; and

On receipt and consideration of respondent EPA's motion to hold a prehearing conference and certain concurrences therein, and such prehearing conference having been held after due notice to all parties; and

On inspection and consideration of petitioners' motions, briefs, and oral arguments and noting that many of them deal with claims of due process violations in respondent EPA's closing of the administrative record without further opportunity on the part of petitioners to present comment or evidence deemed by them to be essential to a just result,

Now therefore this Court, in the interest of as expeditious judicial disposition of this complex litigation as possible, hereby, *sua sponte*,

extends to all petitioners in this consolidated proceeding a stay of enforcement of said orders of respondents EPA and Train, subject to the following conditions:

No petitioners shall be permitted to submit any new emission, process or air quality data. Comments relating to clerical or computational errors shall be permitted.

Whenever possible, petitioners shall make consolidated submissions to the Agency.

All submissions shall be made by petitioners no later than January 14, 1977, and the Agency shall prepare an appropriate response and shall amend the subject regulations if and as necessary within an additional 60 days therefrom.

The stay granted herein will terminate twenty-one (21) days after respondent EPA files with this Court the response called for above, unless otherwise directed by this Court.

Pursuant to the order of this court, the effective date of the SO<sub>2</sub> regulations was June 17, 1977. EPA has advised this court, however, that it has not begun enforcement proceedings in relation to any sources involved directly in this litigation.

Although this court's order allowed the petitioners 60 days for presentation of additional evidence and comment, EPA *sua sponte* extended the remand period briefly. Promptly upon notice that EPA had filed its response to petitioners' objections and comments resulting from the remand, this court scheduled two full days of hearings on these cases for purposes of as quick an adjudication at the appellate level as might be achieved.



## DISPOSITION OF THE GENERAL ISSUES V

### 1. The State of Ohio's Petition

On July 13, 1977, the State of Ohio belatedly moved for leave to intervene in this proceeding. Its motion attacked the EPA sulfur dioxide emission control plan as having an adverse impact on the Ohio coal industry, and the Ohio economy as a whole. The motion also asserted that the State was developing a sulfur dioxide plan which would eliminate excessive abatement requirements which Ohio perceived to exist in the federal regulations. This court granted the motion for leave to intervene and has considered the brief and the reply brief filed by Ohio. Under this first disposition heading we consider only Ohio's suggestion that this court reject the United States Environmental Protection Agency's sulfur dioxide control plan and rely upon Ohio's implied promise to promulgate a state sulfur dioxide plan sometime in the future.

We reject this suggestion on the basis of a record of delay and default which has left Ohio in the position of being the only major industrialized state lacking an enforceable plan for control of sulfur dioxide.

It was clearly the intention of Congress to have a plan for control of sulfur dioxide emissions in place in all states in need of such control by the year 1972. Clean Air Act §§ 109 (a), 110(a), 42 U.S.C. §§ 1857c-4(a), 5(a) (1970 & Supp. V 1975). It was equally clearly the intention of Congress that the preferred mechanism for establishment of such a plan was through the establishment and operation of a state environmental protection agency. § 107(a), 42 U.S.C. § 1857c-2(a) (1970). On January 30, 1972, Ohio did submit a plan for approval by the Administrator of the United States

Environmental Protection Agency under Section 110 of the Act and the Administrator approved that plan. That approval, however, was challenged in this court on the ground that such approval required a federal rulemaking hearing prior to the required approval by the federal Administrator. Among other claims laid before this court in that petition was an attack on the sulfur dioxide control scheme contained in the Ohio plan, claiming "there is presently no technologically feasible method of removing from their coal burning emissions an amount of sulfur sufficient to meet the standards." See *Buckeye Power, Inc. v. EPA*, 481 F.2d 162, 167 (6th Cir. 1973). It was also petitioners' contention in that same litigation that they had not been allowed to document these claims of impossibility before the federal Administrator prior to his approval of the state plans. On analysis of these arguments, this court vacated the approval of the Ohio state plan and remanded the case to the Agency for compliance with Section 4 of the Administrative Procedure Act, 5 U.S.C. § 553 (1970 & Supp. V 1975), which requires adherence to informal rulemaking procedures.

Before the hearing could be held which was called for in *Buckeye Power #1, supra*, the governor of Ohio, on August 27, 1972, "withdrew" the sulfur dioxide portion of the state EPA plan. At that point Ohio began work on a new plan for sulfur dioxide control. On May 30, 1974, the second plan was submitted to the United States EPA for approval. It had, however, been challenged at the state level and was partially vacated on procedural grounds by the Ohio Environmental Board of Review on September 12, 1974, and for a second time on July 16, 1975, the governor of Ohio withdrew the Ohio plan to control sulfur dioxide.

The Clean Air Act, as amended, provides in part:

(c) (1) The Administrator shall, after consideration of any State hearing record, promptly prepare and publish proposed regulations setting forth an implementation plan, or portion thereof, for a State if —

(A) the State fails to submit an implementation plan for any national ambient air quality primary or secondary standard within the time prescribed. . . .

Clean Air Act § 110(c) (1), 42 U.S.C. § 1857c-5(c) (1) (Supp. V 1975).

Clearly, the State of Ohio has failed to submit an implementation plan for sulfur dioxide for which a national ambient air quality primary standard has been prescribed. Equally clearly, five years have now elapsed beyond the date when such an implementation plan was called for under the Clean Air Act. Under these circumstances, we find no warrant, consistent with the purposes of the federal legislation, for giving heed to Ohio's petition for further delay.

Intervenor Ohio's other objections to the United States EPA's sulfur dioxide control plan will be considered under Part 3 of the disposition section of this opinion.

## 2. The Additional Remand and Cross-Examination Issue

The leading brief in this series of cases filed on behalf of the utilities opens its argument for remand as follows:

The Most Appropriate Manner To  
Resolve The Multitude Of Issues

Raised Is A Remand To The EPA With Directions To Hold Further Hearings To Reconsider The Significant Issues; Given The Nature Of This Rule-making, Any Remand Should Incorporate Procedural Safeguards Such As Right To Cross-Examine Or Question EPA.

Admittedly, there is no statutory requirement that EPA afford the regulated the opportunity to confront its decision makers through adjudicative-type hearings. See *Buckeye Power, Inc.*, *supra* [*Buckeye Power, Inc. v. EPA*, 481 F.2d 162 (1973)].

However, this EPA promulgation contains so many specific findings and actions that the normal comment period has not been sufficient to expose and evaluate all of the important facts before this Court. EPA has promulgated emission limits specific to a plant, has applied specific diffusion models specific to a plant, and has reached specific conclusions regarding economics specific to a plant. Each decision is based on fact upon fact and conclusion upon conclusion. In essence and in operation, this plan and its formulation smack of the issuance of an order as defined by EPA.

In *Buckeye Power #1*, a panel of this court, prior to the first remand of the sulfur dioxide problem for federal hearings, considered the question as to whether or not adjudicatory hearings (including cross-examination) were required. The opinion rejected



this suggestion with the following reasoning:

However, as heretofore noted, the petitioners herein do not simply request a remand with instructions to adhere to the informal rulemaking dictates of Section 553 of the APA; they also request a full-scale evidentiary hearing before the Administrator to adjudicate their complex and intricate claims of high cost-benefit, technological infeasibility and resource unavailability. We cannot accept this position.

Administrative rulemaking which is to be preceded by extensive hearings where "[a] party is entitled to present his case or defense by oral or documentary evidence, to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts. . ." (5 U.S.C. § 556(d) (1967)) is required only when the last sentence of Section 553(c) of the APA applies. This section provides:

"When rules are required by statute to be made *on the record after opportunity for an agency hearing*, sections 556 and 557 of this title apply instead of this subsection." (Emphasis added). (5 U.S.C. § 553(c) (1967)).

(Sections 556 and 557 of the APA outline the requirements for extensive, adjudicatory-type hearings.)

Thus, when a statutory provision directing certain agency action states that such action shall be "made on the record after opportunity for an agency hearing," then, and only then, is the agency required to have full-scale adjudicatory hearings prior to rulemaking. \* \* \*

There is no provision that, in approving or disapproving proposed state pollution-abatement plans pursuant to 42 U.S.C. § 1857c-5(a) (2) (1973 Supp.), the Administrator shall make a determination "on the record after an opportunity for an agency hearing." Furthermore, when Congress intended that actions of the Administrator of the EPA be preceded by adjudicatory-type hearings it either specifically outlined the type of hearings, (42 U.S.C. § 1857f-5a(c) (1) (1973 Supp.)), or invoked the determination "on the record" provision of 5 U.S.C. § 553(c) (1967). See 42 U.S.C. § 1857c-5(f) (2) (1973 Supp.); 42 U.S.C. § 1857f-5(b) (2) (B) (1973 Supp.). On these grounds alone we would reject the petitioners' argument that the Administrator is required to have full-scale adjudicatory-type hearings prior to acceptance of the state plans.

*Buckeye Power, Inc. v. EPA*, 481 F.2d 162, 172-73 (6th Cir. 1973). (Footnote omitted.)

More importantly, we note the following discussion of the issue now before us in the unanimous opinion in *United States v. Allegheny-Ludlum Steel Corp.*, 406 U.S. 742 (1972), wherein the Supreme Court of the United States said:

This Court has held that the Administrative Procedure Act applies to proceedings before the Interstate Commerce Commission, *Minneapolis & St. Louis R. Co. v. United States*, 361 U.S. 173, 192 (1959). Appellees claim that the Commission's procedure here departed from the provisions of 5 U.S.C. §§ 556 and 557 of the Act. Those sections, however, govern a rulemaking proceeding only

when 5 U.S.C. § 553 so requires. The latter section, dealing generally with rulemaking, makes applicable the provisions of §§ 556 and 557 only "[w]hen rules are required by statute to be made on the record after opportunity for an agency hearing . . . ." The Esch Act, authorizing the Commission "after hearing, on a complaint or upon its own initiative without complaint, [to] establish reasonable rules, regulations, and practices with respect to car service . . .," 49 U.S.C. § 1 (14) (a), does not require that such rules "be made on the record." 5 U.S.C. § 553. That distinction is determinative for this case. "A good deal of significance lies in the fact that some statutes do expressly require determinations on the record." 2 K. Davis, *Administrative Law Treatise* § 13.08, p. 225 (1958). Sections 556 and 557 need be applied "only where the agency statute, in addition to providing a hearing, prescribes explicitly that it be 'on the record.'" *Siegel v. Atomic Energy Comm'n*, 130 U.S. App. D.C. 307, 314, 400 F.2d 778, 785 (1968); *Joseph E. Seagram & Sons, Inc. v. Dillon*, 120 U.S. App. D. C. 112, 115 n. 9, 344 F.2d 497, 500 n. 9 (1965). Cf. *First National Bank v. First Federal Savings & Loan Assn.*, 96 U.S. App. D. C. 194, 225 F.2d 33 (1955). We do not suggest that only the precise words "on the record" in the applicable statute will suffice to make §§ 556 and 557 applicable to rulemaking proceedings, but we do hold that the language of the Esch Car Service Act is insufficient to invoke these sections.

Because the proceedings under review were an exercise of legislative rulemaking power rather

than adjudicatory hearings as in *Wong Yang Sung v. McGrath*, 399 U.S. 33 (1950), and *Ohio Bell Telephone Co. v. Public Utilities Comm'n*, 301 U.S. 292 (1937), and because 49 U.S.C. § 1 (14) (a) does not require a determination "on the record," the provisions of 5 U.S.C. §§ 556 and 557 were inapplicable.

This proceeding, therefore, was governed by the provisions of 5 U.S.C. § 553 of the Administrative Procedure Act, requiring basically that notice of proposed rulemaking shall be published in the Federal Register, that after notice the agency give interested persons an opportunity to participate in the rulemaking through appropriate submissions, and that after consideration of the record so made the agency shall incorporate in the rules adopted a concise general statement of their basis and purpose. The "Findings" and "Conclusions" embodied in the Commission's report fully comply with these requirements, and nothing more was required by the Administrative Procedure Act.

*United States v. Allegheny-Ludlum Steel Corp.*, *supra* at 756-58. (Footnote omitted.)

Further, in *United States v. Florida East Coast R. Co.*, 410 U.S. 224, 238 (1973), the Supreme Court reiterated and reinforced its decision in *United States v. Allegheny-Ludlum Steel Corp.*, *supra*. In the *Florida Coast R. Co.* case the Court held:

Section 553 excerpts from its requirements rulemaking devoted to "interpretive rules, general statements of policy, or rules of agency organization, procedure, or practice," and

rulemaking "when the agency for good cause finds . . . that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest." This exception does not apply, however, "when notice or hearing is required by statute"; in those cases, even though interpretative rulemaking be involved, the requirements of § 553 apply. But since these requirements themselves do not mandate any oral presentation, see *Allegheny-Ludlum, supra*, it cannot be doubted that a statute that requires a "hearing" prior to rulemaking may in some circumstances be satisfied by procedures that meet only the standards of § 553. The Court's opinion in *FPC v. Texaco, Inc.*, 377 U.S. 33 (1964), supports such a broad definition of the term "hearing."

Similarly, even where the statute requires that the rulemaking procedure take place "on the record after opportunity for an agency hearing," thus triggering the applicability of § 556, subsection (d) provides that the agency may proceed by the submission of all or part of the evidence in written form if a party will not be "prejudiced thereby." Again, the Act makes it plain that a specific statutory mandate that the proceedings take place on the record after hearing may be satisfied in some circumstances by evidentiary submission in written form only.

We think this treatment of the term "hearing" in the Administrative Procedure Act affords a sufficient basis for concluding that the requirement of a "hearing" contained in § 1 (14) (a), in a situation where the Commission was

acting under the 1966 statutory rulemaking authority that Congress had conferred upon it, did not by its own force require the Commission either to hear oral testimony, to permit cross-examination of Commission witnesses, or to hear oral argument.

*United States v. Florida East Coast R. Co., supra* at 240-41.

Taking those precedents into account, it seems clear to us that the legislative-type hearings conducted by the United States EPA concerning the Ohio SO<sub>2</sub> control plan were consistent with the provision of the Clean Air Act and the Administrative Procedure Act, and we further conclude that the hearings are not inconsistent with the due process clause of the Fourteenth Amendment. As pointed out in the quotation from *Buckeye Power #1, supra*, Congress did not insert into the Clean Air Act the language requiring the Administrator to make determinations "on the record after an opportunity for an agency hearing" which the Supreme Court has held to trigger the requirement of an adjudicative hearing. And if there was a legitimate due process complaint arising from the fact that petitioners had not had a chance to comment upon the RAM model as employed by United States EPA in its Ohio SO<sub>2</sub> control plan, we believe it was surely cured by this court's remand for reopening of the administrative record and United States EPA's reconsideration thereafter.

We note, as petitioners encourage us to, that some cases in other circuits hold that it is the importance and complexity of the issues decided by the administrative agency which should determine the kind of hearing



procedures required rather than any formal classification of the process as either rulemaking or adjudicatory. See *Appalachian Power Co. v. EPA*, 477 F.2d 495, 500-01 (4th Cir. 1973); *Walter Holm & Co. v. Hardon*, 449 F.2d 1009, 1015 (D.C. Cir. 1971). Typically, however, it is important and complex problems which Congress assigns to administrative agencies. Thus far neither Congress nor the Supreme Court has elected to adopt such a flexible standard or to assign exclusive responsibility for the choice of agency hearing procedures to the federal courts.

Several petitioners also argue that this Circuit should follow the example of the Ninth Circuit in *Bunker Hill Co. v. EPA* — F.2d — (9th Cir. 1977) (decided July 5, 1977) to the extent of remanding the proposed sulfur dioxide control standards to allow cross-examination of United States EPA's experts and additional comment thereafter.

In contrast to our remand order of November 12, 1976, the Ninth Circuit did provide for cross-examination pertaining to what it termed a highly complex and technical issue concerning the technological feasibility of the use of sulfur burners to effect control of Bunker Hill's lead smelter emissions. While we believe that cross-examination of an administrative agency's experts is not a required or normal part of informal rulemaking under Section 553, we do not exclude the possibility that a case may be presented to this court wherein remand for cross-examination about disputed facts will prove both logical and necessary.

We do not, however, find any legal requirement or practical need for any more hearings, with or without cross-examination, in order to answer the three major

general issues posed in the instant cases. Petitioners have had ample opportunities to present their views to the agency. A full record has been written. There has already been an inordinate delay of five years longer than Congress contemplated.

### 3. The RAM Model

The petitioners in these cases center most of their criticisms upon the United States EPA's use of the Real-Time Air-Quality-Simulation Model ("RAM") which was employed by the agency in preparation of the Ohio sulfur dioxide control plan. RAM is a dispersion model which evaluates the interaction of a variety of facts in order to make predictions concerning the contribution to the pollution of the ambient air by specific plants. Its formula takes into account the capacity of each plant on a stack-by-stack basis and adds thereto smokestack height, surrounding terrain, and weather conditions. The model is operated on the assumption that the plants concerned operate 24 hours a day at full capacity and predictions are made for every day of the year. The ultimate standards are set according to the predicted second-worst day in terms of pollution results shown.

In comparison to all other prior methods of controlling pollution, RAM starts with a solid, ascertainable data base. This is the established design capacity of the power plants in question related to the sulfur content of the fuel used by each. From these factors the "emissions data" for each plant is developed.

When stack height, wind, weather, terrain, land use, etc., are figured in, the RAM model has the additional value of allowing its user to predict with considerable

accuracy the relative contributions of specific power plant stacks to the points of maximum concentration of pollution of the ambient air.

The RAM model was actually developed as a result of United States EPA's public hearings on the proposed plan for Ohio after five days of hearings on said proposed plan in Columbus, Cleveland, Cincinnati, and Steubenville at which petitioners involved in this current litigation were given an opportunity (which most accepted) to appear, testify, or submit comments. At those hearings the major source of criticism from industries, including some of the present petitioners, was that the plan then under consideration did not determine limitations by individual stacks to a sufficient degree. EPA in its brief in this case compares the "rollback" model employed in the preparation of the first Ohio plan to dispersion models like RAM, which is now the source of present controversy:

Unlike the rollback model, the dispersion models used in developing the promulgated plan allow a determination of the cause-effect relationship between the SO<sub>2</sub> emissions of the pollution sources in an area and the resulting ambient air quality. Therefore, it is possible to determine the proportion by which each source must reduce emissions to meet ambient standards. With the use of the rollback model, in contrast, each source's emissions in the region, whether or not they contributed to a pollution problem, were required to be reduced. Through dispersion modeling, emission limitations can now be set with increased precision. Overcontrol is minimized, so that the plan will still insure attainment and maintenance of the air quality

standards, but at a much reduced cost to the sources. This is most clearly demonstrated by comparing emission limitations for power plants under the various plans. Power plants account for approximately 80% of the sulfur dioxide emissions in the State.

However, achievement of this added precision requires a massive analytical task. Tremendous amounts of data are required for each source analyzed. In addition to the emissions data for each source, dispersion modeling requires detailed information on all the factors that affect the dispersion of emissions. These include the height of the source's stack (or usually stacks), the spatial orientation of the sources to each other, the topography of the area and the effects it will have on dispersion, and, of crucial importance, detailed weather data for the area.

All this information is needed so that the computer analysis reflects actual conditions. For example, a gaseous pollutant emitted over a grassy field will disperse much differently than if the pollutant is emitted over a large urban area. There the dispersion will be affected not only by the local weather conditions but also by the greater turbulence caused by the different types of surface areas and heat sources throughout a city.

EPA goes on to point out that there are more than 1,000 point sources in the State of Ohio and more than 2,000 area sources, and that in relation to emission data, United States EPA utilized (among other sources) the data base on sulfur dioxide required to be reported to the State of Ohio under Ohio Rev. Code Ann §§ 3704.03(I), 3704.05(c) (Page 1971 & 1976 Supp.).



It is, of course, no part of the responsibility of this court to determine whether the RAM model represents the best possible approach to determining standards for the control of sulfur dioxide emissions. Our standard of review of the actions of United States EPA is whether or not the action of the agency is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 305(a), 91 Stat. 775 (to be codified as 42 U.S.C. § 7607(d) (9) (A)). Thus, we are required to affirm if there is a rational basis for the agency action and we are not "empowered to substitute [our] judgment for that of the agency." *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971).

Our review of this record convinces us that we cannot properly hold that United States EPA's adoption of the RAM model for predicting sulfur dioxide emissions and for fixing maximum levels of sulfur dioxide emissions by specific sources was arbitrary and capricious or beyond the agency's authority under the Clean Air Act. The factors cited below support EPA's argument that the RAM model is supported by sufficient evidence so that EPA's adoption cannot be held arbitrary and capricious:

1) United States EPA's use of the "rollback" model — the principal basis of its first plan on which five days of public hearings were conducted in Ohio — was strenuously objected to by representatives of many of the present petitioners because it was not source-specific and, as a consequence, tended to require more stringent sulfur dioxide controls than would be required if plant capacity, fuel, population, smokestack height, wind and climate were all taken into account. Thus John R. Martin, of Smith & Singer Meteorologists,

Inc., commented on behalf of Ohio utilities on the first United States EPA plan as follows:

More sophisticated modeling is necessary in all seven of the urban counties that use the proportional rollback. In this way, the Federal air quality standards can be attained without unnecessary SO<sub>2</sub> emission restrictions being imposed upon sources that do not contribute to an SO<sub>2</sub> problem.

\* \* \*

We recommend that new strategies be tested which will more fairly identify and control SO<sub>2</sub> sources that create SO<sub>2</sub> problems.

Similarly Dr. Howard M. Ellis, of Enviroplan, Inc., said on behalf of Ohio power plants:

[I]n developing an SO<sub>2</sub> control program for this plant, Region V did not consider economically efficient alternatives to constant uniform emission standards — alternatives such as utilizing a supplementary control system to achieve air quality standards or using separate SO<sub>2</sub> emission standards by stack in accordance with each stack's contribution to ground-level SO<sub>2</sub> concentrations. Separate emission standards by stack can reduce considerably the cost of achieving air quality standards . . . .

2) EPA responded to these arguments favorably by devising and adopting the RAM model which did employ all of these source-specific factors.

3) Further, as shown on the following charts, the United States EPA 1976-1977 SO<sub>2</sub> control plan (principally based upon the RAM and MAX-24 models)

shows less stringent regulation on a county-by-county basis when compared to the Ohio SO<sub>2</sub> control plans originally promulgated in 1972 and 1974. In addition, when the comparison is limited to petitioners involved in this litigation, but including all of their facilities which were subjected to RAM modeling (and which are identified in this record), we find the plan slightly less strict on a facility comparison basis than the Ohio 1972 plan by a count of 24 to 17, and slightly more strict than the Ohio 1974 plan by a count of 23 to 20.

These comparisons do not, of course, necessarily demonstrate RAM's accuracy. Rather, the comparison with Ohio's previous plans (based upon the earlier rollback model which was used and accepted nationwide) tends simply to show that the choice of RAM modeling lay within administrative discretion.

#### RELATIVE STRINGENCY OF US EPA REGULATIONS AND PREVIOUSLY PROMULGATED REGULATIONS

	Ohio EPA 1972	Ohio EPA 1974	
1. US EPA 1976-77			
urban RAM regs are:	regs for:	regs for:	
stricter than	14	20	of petitioners' facilities <sup>1</sup>
less strict than	21	17	"
the same as	1	1	"
ambiguous <sup>2</sup> compared with	6	4	"
2. US EPA 1976-77			
rural RAM regs are:			
stricter than	3	3	"
less strict than	3	3	"
the same as	0	0	"
ambiguous <sup>2</sup> compared with	0	0	"

3. US EPA 1976-77			
regs (all models) are:			
stricter than	4	7	Ohio counties <sup>3</sup>
less strict than	40	35	"
the same as	0	0	"
ambiguous <sup>2</sup> compared with	24	26	"
4. US EPA 1976-77			
regs (all models) are			
stricter than	22	32	of petitioners' facilities <sup>1</sup>
less strict than	50	43	"
the same as	1	1	"
ambiguous <sup>2</sup> compared with	14	11	"

<sup>1</sup> Including facilities to the regulation of which petitioners do not object.

<sup>2</sup> I.e., stricter for some stacks or facilities and less strict for others; or employing different units of measurement, rendering comparison impossible; or insufficient data available for meaningful comparison.

<sup>3</sup> Twenty other counties contain no point sources of SO<sub>2</sub> emissions.

All comparisons are based on the data set out in Appendices A, B and C.

4) While this court has currently before it some 32 petitioners protesting the United States EPA's plan for SO<sub>2</sub> emission control for Ohio, it must be remembered that Ohio is estimated to have over 1,000 point sources and over 2,000 area sources of SO<sub>2</sub> pollution.

5) The RAM model is a general formula which can be applied to many individual sources of pollution to derive specific estimates of SO<sub>2</sub> emission rates for each.

It employs a wider, more complete and more accurate data base than any prior model yet employed in devising a sulfur dioxide control strategy for a state or county. The crucial data with which the RAM model starts is the design capacity figure, plus the fuel sulfur content, from which is computed the SO<sub>2</sub> emission rate for each of the heating or power plants sought to be controlled. Thus at the outset the RAM model starts with ascertainable specific figures for each source where disputes can be resolved by inspection of the equipment or fuel concerned. Many of the additional components such as stack height, wind direction, physical relationship of sources to each other, and topography of the area are similarly ascertainable as matters of fact. With the enormous financial stakes involved in this litigation, every effort to avoid disputes about the accuracy of the data base should be made. This record shows that United States EPA's design of the RAM model was brought about at least in large part by Ohio industry's requests for greater specificity and hence lower costs of compliance with National Air Quality Standards.

6) While there may yet be developed (and hopefully will be) a better method of establishing a control strategy for sulfur dioxide emissions than the RAM model, no one has yet come forward with such. Nor do petitioners point to any such.

This is not to ignore that petitioners do cite Enviroplan's claims of a superior model termed Air Pollution Evaluation System. This record shows, however, that United States EPA asked for the Enviroplan model and was refused, and is now refused the operative details of that model on the grounds of proprietary interest. While such withholding may be

both defensible as a matter of law, and understandable as a matter of economics, this court cannot consider Enviroplan's model as available technology until and unless it is fully disclosed and evaluated by United States EPA — the agency charged by Congress with making these decisions.

7) We recognize that this record does not present positive proofs of the accuracy of RAM's predictions. Thus far technology has not developed foolproof methods for validating predictions concerning pollution of the ambient air absent years of collection of monitoring data with far more monitors and far more personnel than have thus far been available. Obviously, also, the monitor locations and the receptor sites for the RAM predictions must correspond.

We find such identity of monitor locations and receptor sites available in this administrative record for the City of Dayton.

The EPA Appendix contains:

1) RAM model computer printouts showing predicted second-highest 24-hour concentrations of sulfur dioxide for several receptor sites, and the location of those sites. (EPA Appendix, Vol. IV, at 85-94, Certified Index XIII. EEE.1.a.3.);

2) Air quality data for 1972-76 at several Dayton sulfur dioxide monitors (EPA Appendix, Vol. IV, at 61, 79, Certified Index XV.K.2.r. and s.); and

3) The locations for the Dayton monitors (EPA Appendix, Vol. IV, at 95-96, Certified Index XII.B.4.a.(1) (d)).



The following chart displays the data contained in these documents:

Site No.	Second-Highest 24-hr Concentration Predicted by RAM (micrograms per cubic meter)	Actual Monitor Readings (micrograms per cubic meter)				
		1972	1973	1974	1975	1976
1	195	*	*	219	*	*
2	201	73	438	181	163	81
3	83	*	*	117	62	57
4	109	*	*	151	109	17
5	161	57	198	*	68	41
6	207	*	13	66	110	75

Our analysis of these data<sup>4</sup> shows that the yearly second-highest concentration of SO<sub>2</sub> pollution (for a 24-hour average) actually recorded on available monitors exceeded the RAM model prediction for each location once in a five-year period at five out of six locations. This analysis certainly falls short of showing RAM's predictive perfection. But it certainly tends to show that the EPA's use of RAM, if conservative, cannot be held to be arbitrary and capricious. See *Sierra Club v. EPA*, 540 F.2d 1114, 1136 (D.C. Cir. 1976). *cert. granted on different issues*, 97 S.Ct. 1597 (1977). See also *Mision Industrial, Inc. v. EPA*, 547 F.2d 123, 128-29 (1st Cir. 1976).

We recognize that petitioners presented Enviroplan's study on RAM predictions and existing monitor results for the three counties in which Akron, Toledo and

<sup>4</sup> Petitioners object with vehemence to EPA's reference in its brief to its discussion of these data as a "study," calling our attention to the fact that the comparison was made by EPA attorneys after the closing of the record. Clearly, however, the raw data to which we have referred and which we have inspected were and are available in the administrative record of this case.

Canton are located, and that they contend that the study's results show gross over-predictions by RAM. Reevaluation of RAM predictions, however, showed that most discrepancies were occasioned by data errors factored into the original RAM predictions for these three counties.

We have also considered the argument based on the Hamill study of RAM's application to St. Louis and Enviroplan's subsequent study thereof. While this latter commentary must be taken into account, when weighed against all other record evidence it fails to convince us that United States EPA's use of RAM was arbitrary and capricious.

8) Finally, as we pointed out at the beginning of this opinion, SO<sub>2</sub> emissions have a direct impact upon the health and lives of the population of Ohio — particularly its young people, its sick people, and its old people. If the RAM model did overpredict emission rates, such a conservative approach in protection of health and life was apparently contemplated by Congress in requiring that EPA plans contain "emission limitations . . . necessary to insure attainment and maintenance" of national ambient air standards. 42 U.S.C. § 1857c-5(a) (2) (B) (1970). (Emphasis added.)

In summary, we hold that United States EPA's adoption and employment of the RAM model as its general working tool was based upon informal rulemaking which satisfied both the requirements of the Clean Air Act, the Administrative Procedure Act, and the due process requirements of the United States Constitution. Further, the record indicates that the Administrator's action in promulgating the sulfur dioxide control regulations for Ohio through use of the RAM model was a rational choice which was well



within the discretion committed to him and his agency. We decline petitioners' requests to set the disputed orders aside on the ground that they are arbitrary and capricious.

### OTHER ISSUES

Somewhat half-heartedly the leading brief for the utilities attacks the United States EPA plan for SO<sub>2</sub> controls in Ohio as excessively costly and asserts that the satisfactory operation of Flue Gas Desulfurization machinery ("scrubbers") has not been demonstrated.

We note that the United States control strategy for Ohio does not rely heavily upon Flue Gas Desulfurization. (EPA estimates — and petitioners do not dispute — that only six utilities will choose this compliance route.) Alternatives to installation of "scrubbers" are the purchasing and use of low sulfur coals or the employment of coal cleaning or blending techniques. There is no doubt, of course, that SO<sub>2</sub> controls will indeed be costly. EPA estimates capital costs for Ohio industry of well over half a billion dollars and annual costs of 171 million dollars. It also projects these costs as requiring a 3% increase in annual electric bills for the consumers who will ultimately pay them — and who will also breathe the less polluted air. Basically the choice of economic burden versus continued deterioration of the air we breathe was made by Congress. In this litigation no issue is raised concerning Congress' power to do so.

We have genuine doubt that this court has the power to review what we regard as petitioners' slightly disguised economic and technological infeasibility

arguments. See generally *Union Electric Co. v. EPA*, 427 U.S. 246, 265-66 (1976).<sup>5</sup> Since this issue does not appear to be definitely resolved as to a United States EPA-designed implementation plan (such as we deal with here) see *Union Electric Co. v. EPA*, *supra* at 261 n.7, we observe that if we did have such power, we would conclude that the technical record compiled in the agency proceeding provides ample support for the economic and technological feasibility of the SO<sub>2</sub> control strategies which United States EPA has promulgated for Ohio.

Petitioners, Cleveland Electric Illuminating Co. and Dayton Power & Light Co., enter objections to the classification of three power plants as "urban." Inspection of the geographic location of these plants and of the population distribution in the near vicinity convinces us that the United States EPA classification cannot properly be termed arbitrary and capricious. Power plant pollution of the ambient air is no respecter of municipal boundary lines.

We note petitioners' objection to the use of the urban dispersion coefficients employed in the RAM model. EPA defends their use by citing the St. Louis study and by noting that no better or more accurate coefficients are available. Since to this observation petitioners reply by asking for more study, we conclude that study should progress while the purposes of the Clean Air Act were being served rather than by indefinite postponement of EPA's mandated task of reducing SO<sub>2</sub> pollution in Ohio.

<sup>5</sup> United States EPA's SO<sub>2</sub> control plan for Ohio has as its goal the attainment of national air quality standards. It does not seek to exceed them. See Note, *The Clean Air Act: "Taking a Stick to the States,"* 25 *Cleve. St. L. Rev.* 371, 405 (1976).

No other material issues are presented.

One petition pending before this court from the Northern Ohio Lung Association attacks United States EPA's failure to promulgate a separate implementation plan for the "secondary standards" for the ambient air. This petition will be the subject of separate consideration.

Similarly, this opinion does not govern any petitions where the RAM model was not used. We do not decide any specific fact disputes raised by any petitioner as to plants other than those treated in this opinion.<sup>6</sup> Decision of these cases will follow.

For the reasons stated above, the decision of the Administrator in imposing the SO<sub>2</sub> control plan is affirmed subject to the reservations indicated above.

No costs are allowed since important public questions are involved.

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<sup>6</sup> See note 1, *supra*.

## APPENDIX A

### COMPARISON OF PROMULGATED REGULATIONS CONCERNING SULFUR DIOXIDE EMISSION LIMITATIONS FOR THE STATE OF OHIO

#### Footnote list:

- a. Source: Ohio Environmental Protection Agency Reg. EP-11-14 (AP-3-14), effective July 17, 1972 (available from Anderson Publishing Co., Cincinnati, Ohio). See Appendix B.
- b. Source: Ohio Environmental Protection Agency Reg. EP-11-13, effective Feb. 1, 1974 (available from Anderson Publishing Co., Cincinnati, Ohio). See Appendix C.
- c. Source: 41 Fed. Reg. 36,324-40 (Aug. 27, 1976); 41 Fed. Reg. 42,455-56 (Nov. 30, 1976); 42 Fed. Reg. 27,588-93 (May 31, 1977).
- d. All figures represent lbs. SO<sub>2</sub> per million British Thermal Units (mBTU) heat input, unless otherwise specified.
- e. Located in Morgan and Washington Counties.
- f. Optional compliance equation omitted from chart.
- g. No present objection to regulation of this facility.
- h. Not regulated.
- i. Excluding sources subject to New Source Performance Standards.
- j. Subject to New Source Performance Standards.
- k. Additional limitations, specified in units other than lbs. SO<sub>2</sub>/mBTU heat input, omitted from chart.
- m. Information not available.

County; Model(s) employed	Petitioner; facility	Ohio EPA 1972 <sup>a</sup>	Ohio EPA 1974 <sup>b</sup>	Current US EPA	
				Reg. <sup>c</sup>	Model
Adams(MAX)	Dayton Power & Light, Stuart plant	3.2 <sup>d</sup>	4.8	3.16 3.16 <sup>f</sup>	MAX
Allen(Rural RAM; MAX)	Standard Oil, Lima refinery Claus unit	1.0	1.0	0.13-5.39 <sup>k</sup> Rural RAM 100 lbs. SO <sub>2</sub> 1000 lbs. S	
	Catalytic cracker/CO boiler			.30 lbs. SO <sub>2</sub> 1000 lbs. product	
	Trolumen unit			11 lbs. SO <sub>2</sub> ton production	
	Iso stabilizer, split heaters			0.71	
	Vac I heater			0.21	
	All other units			0.13	
	Standard Oil, Vistron plant <sup>g</sup>			1.27	Rural RAM
	Ohio Power, Woodcock plant <sup>g</sup>			4.38	MAX
Ashland(no sources)		1.6	4.8	h	-
Ashtabula(SCIM)	Cleveland Elec. Illum., Ashtabula plant <sup>g</sup>	1.6	1.0	1.30-9.10	SCIM
	Stacks 1-3			2.40	
	Stack 4			9.10	
	Stack 5			8.20	
Athens(MAX; SCIM)	Columbus & So. Ohio Power, Poston plant	1.6	4.0	3.72-7.50 <sup>i</sup>	MAX
	Stacks 1 & 2			3.72 <sup>f</sup>	
	Stack 3			1.20 <sup>f,j</sup>	
Auglaize(SCIM)	Goodyear Tire and Rubber <sup>g</sup>	1.0	4.0	4.20 4.20	SCIM

County; Model(s) employed	Petitioner; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA	
				Reg.	Model
Belmont(MAX; modified rollback)	Wheeling-Pittsburgh Steel, Martins Ferry	1.0	1.6	2.60	
	Ohio Edison, Burger plant			2.60 h	rollback
Brown(no sources)		3.2	4.8	h	-
Butler(Rural RAM)	Armco, Hamilton coke plant	1.6	1.6	0.50-3.43 <sup>k</sup> 0.73	Rural RAM
	Armco, Middletown plant			2.11	Rural RAM
	Boilers B1-B4			1.79	
	Boilers E7-B10				
	General Motors, Hamilton Fisher Body			1.40	Rural RAM
Carroll(no sources)		1.0	4.0	h	-
Champaign(no sources)		1.0	4.8	h	-
Clark(MAX)	Ohio Edison, Mad River plant <sup>g</sup>	1.6	4.8	1.00-4.62 4.62 <sup>f</sup> 1.00	MAX
	Stacks 1-3				
	Stacks 4 & 5				
Clermont(MAX)	Cincinnati G. & E., Beckjord plant	1.6	4.8	2.02 2.02 <sup>f</sup>	MAX
Clinton(no sources)		3.2	4.0	h	-
Columbiana(MAX)	Ohio Edison, East Palestine plant <sup>g</sup>	1.0	1.0	4.40 4.40	MAX
Connocton(MAX)	Columbus & So. Ohio Elec., Conesville	1.0	1.6	5.66 <sup>i</sup>	MAX
	Stacks 1-3			5.66 <sup>f</sup>	
	Stack 4			1.20 <sup>j</sup>	

County; Model(s) employed	Petitioner; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA	
				Reg.	Model
Crawford(MAX)		1.6	4.8	9.60	
Cuyahoga(RAM)		1.0	1.0	0.50-4.60 <sup>k</sup>	
	Allied Chemical			4.8 lbs. SO <sub>2</sub>	
	Republic Steel			ton of acid	RAM
	Oxygen furnace, open hearth, blast furnaces, foundry, etc.			1.20 <sup>k</sup>	
	84" slab furnaces			1.24 <sup>k</sup>	
	Boilers			1.00	
	Cleveland Elec. Illuminating, Lakeshore				RAM
	Unit 18			1.30	
	Units 91-94			1.90	
	Cleveland Elec. Illumination, Hamilton Ave.			1.00	RAM
	U. S. Steel, Cuyahoga-Lorain works			0.50	RAM
	U. S. Steel, Cuyahoga works			1.30	RAM
	Dupont				RAM
	Boiler 18			0.50	
	Sulfuric acid units			10 lbs. SO <sub>2</sub>	
				ton of acid	
	Standard Oil, Cleveland Asphalt plant			0.50	RAM
	General Motors, Fisher Body plant			2.10	RAM
Darke(no sources)		1.6	4.8	h	-
Defiance(MAX)		1.0	4.0	h	
Delaware(MAX)		3.2	4.8	4.00	
Erie(MAX)		3.2	1.6	1.60 <sup>k</sup>	
Fairfield(MAX)		3.2	4.0	6.90-7.00	

County; Model(s) employed	Petitioner; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA	
				Reg.	Model
Fayette(no sources)		3.2	4.0	h	-
Franklin(RAM)		3.2	3.2	1.06-4.80 <sup>k</sup>	
	White-Westinghouse			2.20	RAM
	General Motors, Fisher Body plant			1.50	RAM
Fulton(no sources)		1.0	4.8	h	-
Gallia(MAX; SCIM)		3.2	4.8	8.20-9.50	
	Ohio Power, Gavin plant <sup>g</sup>			9.50	MAX
Geauga(MAX)		1.0	4.8	h	
Greene(MAX; Rural RAM; SCIM)		1.6	4.0	0.30-6.20 <sup>k</sup>	
Guernsey(MAX)		1.0	4.8	h	
Hamilton(modified rollback; MAX; SCIM)		1.6	1.6	0.30-5.50 <sup>k</sup>	
	Cincinnati G. & E., Miami Fort plant				MAX
	Stack 2			0.30	
	Stacks 3 & 4			3.30	
	Stack 5			5.50	
	Stack 6			1.20 <sup>d</sup>	
	Dupont, Fort Hill plant			21 lbs. SO <sub>2</sub>	
				ton of acid	MAX
Hancock(MAX; SCIM)		1.0	3.2	2.50-5.20	
Hardin(MAX)		1.0	4.0	h	
Harrison(no sources)		1.0	4.0	h	-
Henry(MAX)		1.0	1.6	2.10	
Highland(no sources)		3.2	4.0	h	-



County; Model(s) employed	Petitioner; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA	
		Reg.	Model		
Hooking(no sources)		3.2	3.2	h	-
Holmes(MAX)		1.6	3.2	h	
Huron(MAX)		3.2	4.0	8.00	
Jackson(no sources)		3.2	4.0	h	-
Jefferson(MAX; modified rollback)		1.0	1.0	0.80-8.10 <sup>k</sup>	
	Wheeling-Pittsburgh Steel, Yorkville			4.20	rollback
	Wheeling-Pittsburgh Steel, Steubenville (2 plants) <sup>6</sup>			50 gr. H <sub>2</sub> S	
				100 daef gas rollback	
	Ohio Edison, Jammis plant			2.91 <sup>f</sup>	MAX
	Ohio Edison, Toronto plant <sup>6</sup>			8.10	MAX
	Ohio Power, Cardinal plant <sup>6</sup>			4.76 <sup>f</sup>	MAX
	Ohio Power, Tidd plant <sup>6</sup>			1.58 <sup>f</sup>	MAX
Knox(MAX)		1.6	3.2	h	
Lake(RAM)		1.0	1.6	0.55-6.00 <sup>k</sup>	
	Cleveland Elec. Illum., East Lake plant			1.43 <sup>f</sup>	RAM
	Republic Steel lime plant <sup>6</sup>			4.21 lbs. SO <sub>2</sub>	
				ton input	RAM
Lawrence(MAX; Rural RAM)		3.2	1.6	1.22-5.52 <sup>k</sup>	
	Allied Chemical, Semet-Solvay			5.52	Rural RAM
Licking(MAX)		3.2	3.2	1.50	
Logan(no sources)		1.0	4.8	h	-
Lorain(RAM)		1.0	1.6	0.17-3.40 <sup>k</sup>	
	Cleveland Elec. Illum., Avon Lake plant			1.15 <sup>f</sup>	RAM
	Ohio Edison, Edgewater plant			3.40	RAM
	B. F. Goodrich			1.70	RAM

County; Model(s) employed	Petitioner; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA	
		Reg.	Model		
Lorain(RAM) (cont.)		1.0	1.6	0.17-3.40 <sup>k</sup>	
	General Motors, Fisher Body Elyria plant				RAM
	Boilers 1 & 2			0.80	
	Boiler 4			0.90	
	Other units			1.80	
	U. S. Steel				RAM
	Boilers 1-9			1.20	
	Boilers 10-13			0.50	
	Processes PO33 & PO39			0.17 <sup>k</sup>	
	All other processes			0.40 <sup>k</sup>	
Lucas(RAM)		1.0	1.0	0.04-4.99 <sup>k</sup>	
	Toledo Edison, Bayshore station			0.50-1.20	RAM
	Toledo Edison, Acme power plant			1.00-3.00	RAM
	Toledo Edison, Water St. steam plant <sup>6</sup>			1.06	RAM
	Standard Oil <sup>6</sup>			0.29-1.00 <sup>k</sup>	RAM
	Coulton Chemical			0.80 <sup>k</sup>	RAM
	Gulf Oil			0.04-0.81 <sup>k</sup>	RAM
	Interlake Steel			0.10 <sup>k</sup>	RAM
	General Motors, Chevrolet plant			1.30	RAM
Madison(MAX)		3.2	4.8	h	
Mahoning(modified rollback)		1.6	1.6	0.50-2.00 <sup>k</sup>	
	Ohio Edison, North Ave. plant			2.00	rollback
	Koppers Co.			2.00	rollback
	Youngstown Sheet & Tube (2 plants)			0.50-0.68 <sup>k</sup>	rollback
	Republic Steel			0.50-0.68 <sup>k</sup>	rollback
Marion(Rural RAM)		1.6	4.0	4.20-6.10	
Medina(MAX)		1.0	4.8	8.00	
Meigs(other modelling strategy)		1.6	4.8	11 lbs. SO <sub>2</sub>	
				ton input	

County; Model(s) employed	Petitioners; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA Reg.	EPA Model
Mercer(MAX)		1.0	4.0	8.00	
Miami(MAX)		1.6	4.0	3.20-4.78 <sup>k</sup>	
Monroe(no sources)		1.0	1.6	h	-
Montgomery(RAM)		1.6	1.6	0.65-1.60 <sup>k</sup>	
	Dayton P. & L., Tait plant			0.65-1.25	RAM
	Dayton P. & L., Hutchings plant			0.65-1.20 <sup>f</sup>	RAM
	Dayton P. & L., Yankee & Monument			0.65	RAM
Morgan(MAX)		1.6	3.2	6.48	
	Ohio Power, Muskingum R. plant <sup>e</sup>			6.48 <sup>f</sup>	MAX
Morrow(no sources)		1.6	4.8	h	-
Muskingum(MAX)		1.0	4.0	1.14 <sup>k</sup>	
	Ohio Power, Philo plant <sup>e</sup>			1.14 <sup>f</sup>	MAX
Noble(no sources)		1.0	4.8	h	-
Ottawa(MAX)		3.2	4.8	5.90 <sup>k</sup>	
Faulding(MAX)		1.0	4.0	43 lbs. SO <sub>2</sub> ton input	
Ferry(no sources)		3.2	4.8	h	-
Pickaway(MAX)		3.2	1.6	0.85-6.04	
	Columbus & So. Ohio Elec., Picway plant			6.04 <sup>f</sup>	MAX
Pike(MAX)		3.2	4.8	7.00	
Portage(MAX)		1.0	4.8	h	
Preble(MAX)		1.6	4.8	h	

County; Model(s) employed	Petitioners; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA Reg.	EPA Model
Putnam(MAX)		1.0	4.8	h	
Richland(MAX; SCIM)		1.6	1.6	3.10-9.30 <sup>k</sup>	
	White-Westinghouse <sup>e</sup>			4.50	MAX;SCI
	General Motors, Fisher Body <sup>e</sup>			3.10	MAX;SCI
Ross(MAX)		3.2	3.2	4.9 lbs. SO <sub>2</sub> ton input	
Sandusky(MAX; SCIM)		3.2	4.0	7.00 <sup>k</sup>	
Scioto(MAX)		3.2	4.8	0.60-6.90 <sup>k</sup>	
Seneca(MAX; SCIM)		3.2	3.2	1.20-8.20 <sup>k</sup>	
Shelby(no sources)		1.0	3.2	h	-
Stark(RAM)		1.0	4.8	0.47-5.20 <sup>k</sup>	
	Republic Steel, Massillon plant <sup>e</sup>			4.40	RAM
	Timken, Gambrinus plant				RAM
	Boilers 1 & 2			3.08	
	Boiler 3			0.93	
	Timken, Canton No. 5 plant			0.67	RAM
	Hoover			2.50	RAM
Summit(RAM)		1.0	1.0	0.70-6.10 <sup>k</sup>	
	Firestone Tire & Rubber			1.78	RAM
	Firestone, Seiberling division			1.33	RAM
	B. F. Goodrich			2.71	RAM
	Goodyear Tire & Rubber, Plant I			1.80-3.96 <sup>k</sup>	RAM
	Goodyear Tire & Rubber, Plant II			1.84 <sup>k</sup>	RAM
	Ohio Edison, Beech St. station			2.71	RAM
	Ohio Edison, Gorge power plant			2.56	RAM
	PFG Industries			1.78	RAM

County; Model(s) employed	Petitioner; facility	Ohio EPA 1972	Ohio EPA 1974	Current US EPA Reg.	Model
Trumbull(MAX; modified rollback)	Republic Steel <sup>g</sup>	1.6	1.0	0.50-5.41 <sup>k</sup>	
	Ohio Edison, Niles plant <sup>g</sup>			1.00-1.60 <sup>k</sup>	rollback
	U. S. Steel, McDonald mills			5.41 <sup>f</sup>	MAX
	GM, Packard Electric Warren plants (2)			0.50	rollback
				m	rollback
Tuscarawas(MAX)		1.0	1.6	4.60 <sup>k</sup>	
Union(no sources)		3.2	4.0	h	-
Van Wert(MAX)		1.6	4.8	h	
Vinton(MAX)	Austin Powder	3.2	4.0	4.80	
				4.80	MAX
Warren(MAX)		1.6	4.8	h	
Washington(MAX)	Shell Oil	1.6	1.6	2.50-6.48	
	Ohio Power, Muskingum R. plant <sup>g</sup>			2.50	MAX
				6.48	MAX
Wayne(MAX; SCIN)		1.6	1.6	7.00	
Williams (MAX)		1.0	4.0	h	
Wood(RAM)		1.0	4.0	1.10	
Wyandot(no sources)		1.6	4.8	h	

## APPENDIX B

## OHIO EPA 1972 REGULATIONS

## EP-11-14 (AP-3-14) Restrictions on emission of sulfur dioxide from the use of fuel.

## (B) Emission limitations.

(1) No person shall cause, suffer, allow, or permit the emission of sulfur compounds caused by the combustion of fuel in fuel-burning equipment from any stack or chimney in excess of the quantity set forth in Figure III.

(2) All persons located within air control regions classified as Priority I Regions shall attain or exceed that degree of emission reduction specified by Curve P-1 by the effective date of this regulation.

(3) All persons located within air quality control regions classified as Priority II Regions shall attain or exceed that degree of emission reduction specified by Curve P-2 by the effective date of this regulation.

(4) All persons located within air quality control regions classified as Priority III Regions shall attain or exceed that degree of emission reduction specified by Curve P-3 by the effective date of this regulation.

(5) All persons located within air quality control regions classified as Priority II or III Regions shall attain or exceed, no later than July 1, 1975, that degree of emission reduction specified by Curve P-1

(Adopted July 6, 1972; effective July 17, 1972.)

S - MAXIMUM ALLOWABLE MASS RATE OF EMISSION OF SULFUR COMPOUNDS  
(AS SULFUR DIOXIDE) - IN POUNDS PER MILLION BTU INPUT

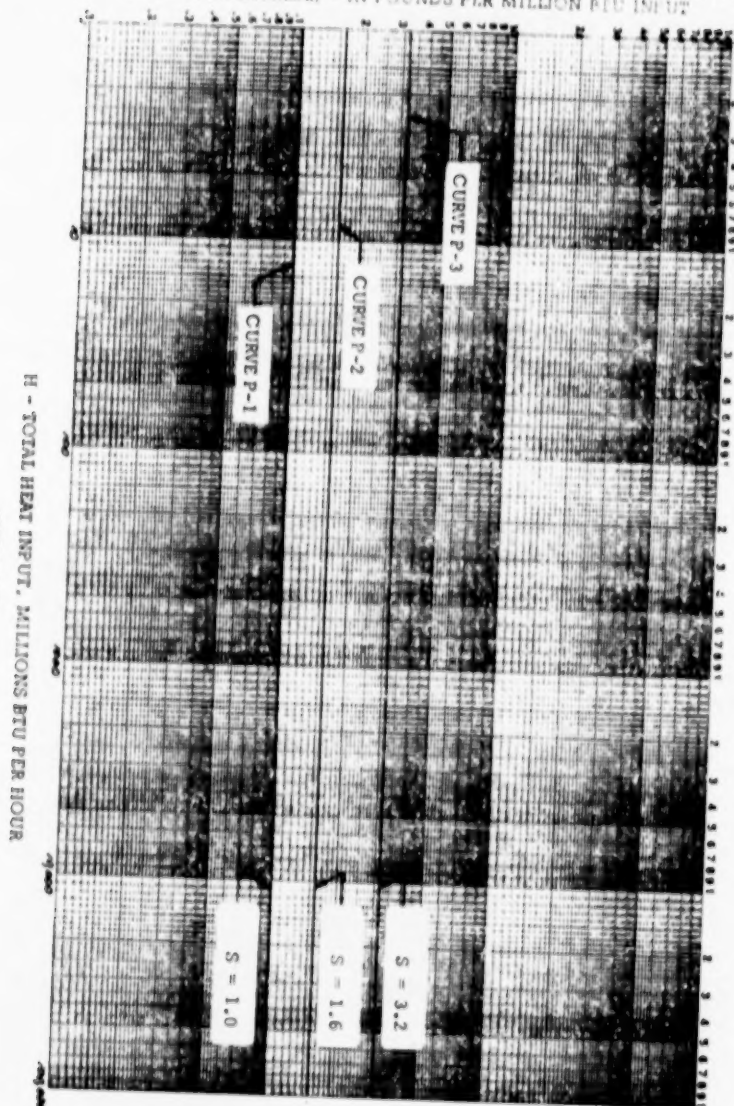


FIGURE III  
EP 11-13

EP-11-06 (AP-3-06) Classification of regions.

CLASSIFICATION BY REGIONS (See Figure IV at end of EP-11)

FEDERAL PRIORITY CLASSIFICATION — BY POLLUTANT —  
FEDERAL REGISTER, MAY 31, 1972

AIR QUALITY CONTROL REGION	FEDERAL NUMBER	PARTI- CULATES	SO <sub>x</sub>	CO	NO <sub>x</sub>	PhIO <sub>x</sub>
Cincinnati (Ky.-Ind.)	079	I	II	III	I	I
Cleveland (Akron, Canton, etc.)	174	I	I	III	I	I
Columbus	176	I	III	III	I	I
Dayton	173	I	II	III	I	I
Mansfield-Marion	175	II	II	III	III	III
Marietta (W. Va.)	179	I	II	III	III	III
Northwest Ohio	177	II	I	III	III	III
Portsmouth-Ironton (Ky.-W.Va.)	103	I	III	III	III	III
Sandusky	180	III	III	III	III	III
Steubenville (W. Va.)	181	I	I	III	III	III
Toledo (Michigan)	124	I	I	III	I	I
Wilmington- Chillicothe-Logan	182	III	III	III	III	III
Youngstown	178	I	II	III	III	III
Zanesville	183	II	IA	III	III	III





FIGURE IV

EP 11-06 (AP 3-06)

CLASSIFICATION BY REGIONS

## APPENDIX C

## OHIO EPA 1974 REGULATIONS

## EP-11-13 Restrictions on emission of sulfur dioxide from use of fuel.

## (B) Emission limitations.

(1) No person shall cause, permit, or allow the emission of sulfur oxides from any facility as defined in subsection (A) (2) of this regulation in excess of the quantity set forth in Table II (Figure V following EP-11) for the county in which the source is located.

(2) No person shall cause, permit, or allow the emission of sulfur oxides in excess of 1.0 pounds per one million BTU of heat input from any new facility made up of one or more new sources with a combined capacity of 100 million BTU per hour or more for which a Permit to Install or Permit to Construct was not obtained before February 1, 1974. New sources with a combined capacity of less than 100 million BTU per hour shall comply with the emission limitations in paragraph (1) of this subsection.

(Adopted January 21, 1974; effective February 1, 1974.)

TABLE II (see Figure V at end of EP-11)

COUNTY	SULPHUR DIOXIDE ALLOWABLE EMISSIONS
Allen	1.0 pounds of sulfur dioxide per million BTU of heat input
Ashtabula	
Columbiana	
Cuyahoga	
Jefferson	
Lucas	
Summit	
Trumbull	

COUNTY	SULPHUR DIOXIDE ALLOWABLE EMISSIONS
Belmont	1.6 pounds of sulfur dioxide per million BTU of heat input
Butler	
Coshocton	
Erie	
Hamilton	
Henry	
Lake	
Lawrence	
Lorain	
Mahoning	
Monroe	
Montgomery	
Pickaway	
Richland	
Tuscarawas	
Washington	
Wayne	
Franklin	3.2 pounds of sulfur dioxide per million BTU of heat input
Hancock	
Hocking	
Holmes	
Knox	
Licking	
Morgan	
Ross	
Seneca	
Shelby	

COUNTY	SULPHUR DIOXIDE ALLOWABLE EMISSIONS
Athens	4.0 pounds of sulfur dioxide per million BTU of heat input
Auglaize	
Carroll	
Clinton	
Defiance	
Fairfield	
Fayette	
Greene	
Hardin	
Harrison	
Highland	
Huron	
Jackson	
Marion	
Mercer	
Miami	
Muskingum	
Paulding	
Sandusky	
Union	
Vinton	
Williams	
Wood	
All other counties:	4.8 pounds of sulfur dioxide per million BTU of heat input

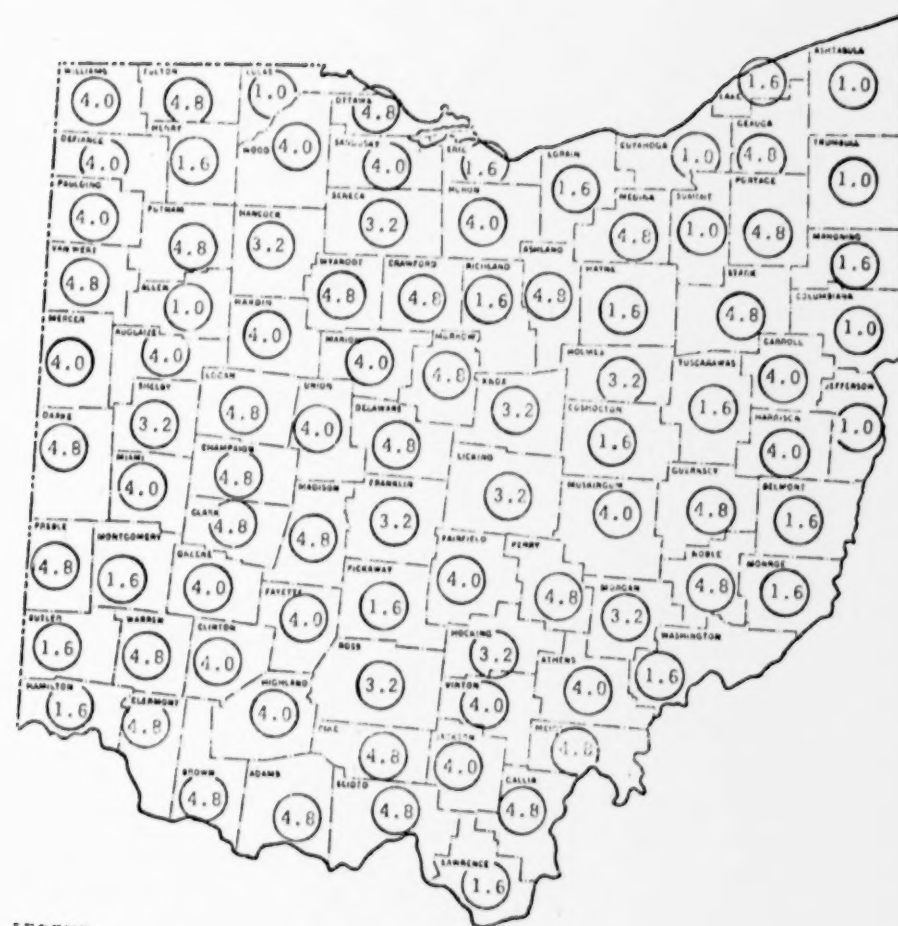


FIGURE V (Table II)

EP 11-13

SULFUR DIOXIDE EMISSION LIMITATIONS

## APPENDIX B

## ORDER

(United States Court of Appeals  
For the Sixth Circuit)

Cleveland Electric Illuminating Co., et al.  
v. Environmental Protection Agency, et al.

Nos. 76-2090, 77-1367, 76-2225, 77-1366  
76-2240, 77-1355, 76-2242, 77-1359  
76-2244, 77-1363, 76-2276, 77-1368.

(Filed February 13, 1978)

Before: PHILLIPS, Chief Judge, EDWARDS and  
PECK, Circuit Judges.

On petition for review of Action of the Administrator  
of the Environmental Protection Agency,

These causes came on to be heard on the record of  
proceedings before the Environmental Protection  
Agency and were argued by counsel.

On consideration whereof, it is now ordered,  
adjudged and decreed by this Court that the decision of  
the Administrator of the Environmental Protection  
Agency in imposing the SO<sub>2</sub> control plan is affirmed  
without prejudice to cases reserved for subsequent  
disposition.

No costs taxed.

ENTERED BY ORDER OF THE COURT.  
/s/ John P. Hehman, Clerk

ISSUED AS MANDATE: March 8, 1978 (As to cases  
76-2242, 77-1359, 76-2244,  
77-1363, 76-2276 and 77-1368)

COSTS: None

## APPENDIX C

## ORDER

(United States Court of Appeals  
For the Sixth Circuit)

Cleveland Electric Illuminating Co., et al.  
vs. Environmental Protection Agency, et al.

Nos. 76-2090, 77-1367; 76-2225, 77-1366;  
76-2240, 77-1355

(Filed April 18, 1978)

Before: PHILLIPS, Chief Judge, EDWARDS and  
PECK, Circuit Judges.

On receipt and consideration of a petition for rehearing and a suggestion for rehearing en banc concerning an opinion of this Court, filed February 13, 1978; and

No active judge of this Court having moved for rehearing en banc and the motion having been referred to the panel which heard the cases; and

On inspection of said motion, finding therein no argument advanced which had not been carefully considered before issuance of the Court's opinion of February 13, 1978,

Now, therefore, said petition is hereby denied.

Entered by order of the Court

/s/ John P. Hehman, Clerk

## APPENDIX D

## RELEVANT PORTIONS OF CLEAN AIR ACT

When the regulations herein being reviewed were proposed and promulgated and the Petitioners' petitions for review were filed, the Clean Air Act Amendments of 1970, 91 Pub. L. No. 604, 84 Stat. 1676 (formerly codified at 42 U.S.C. §§ 1857, *et seq.* (1970)) was in effect. The relevant provisions of 42 U.S.C. §§ 1857, *et seq.* (1970), are as follows:

\* \* \* \*

§ 1857c—3. [§ 108.] Air quality criteria and control techniques — Air pollutant list; publication and revision by Administrator; issuance of air quality criteria for air pollutants

(a) (1) For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall within 30 days after December 31, 1970, publish, and shall from time to time thereafter revise, a list which includes each air pollutant —

(A) which in his judgment has an adverse effect on public health or welfare;

(B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and

(C) for which air quality criteria had not been issued before December 31, 1970, but for which he plans to issue air quality criteria under this section.



(2) The Administrator shall issue air quality criteria for an air pollutant within 12 months after he has included such pollutant in a list under paragraph (1). Air quality criteria for an air pollutant shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities. The criteria for an air pollutant, to the extent practicable, shall include information on —

(A) those variable factors (including atmospheric conditions) which of themselves or in combination with other factors may alter the effects on public health or welfare of such air pollutant;

(B) the types of air pollutants which, when present in the atmosphere, may interact with such pollutant to produce an adverse effect on public health or welfare; and

(C) any known or anticipated adverse effects on welfare.

\* \* \* \*

**§ 1857c—4. [§ 109.] National primary and secondary ambient air quality standards; promulgation; procedure**

(a) (1) The Administrator —

(A) within 30 days after December 31, 1970, shall publish proposed regulations prescribing

a national primary ambient air quality standard and a national secondary ambient air quality standard for each air pollutant for which air quality criteria have been issued prior to such date; and

(B) after a reasonable time for interested persons to submit written comments thereon (but no later than 90 days after the initial publication of such proposed standards) shall by regulation promulgate such proposed national primary and secondary ambient air quality standards with such modifications as he deems appropriate.

(2) With respect to any air pollutant for which air quality criteria are issued after December 31, 1970, the Administrator shall publish, simultaneously with the issuance of such criteria and information, proposed national primary and secondary ambient air quality standards for any such pollutant. The procedure provided for in paragraph (1) (B) of this subsection shall apply to the promulgation of such standards.

(b) (1) National primary ambient air quality standards, prescribed under subsection (a) of this section shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health. Such primary standards may be revised in the same manner as promulgated.

(2) Any national secondary ambient air quality standard prescribed under subsection (a) of this section shall specify a level of air quality the attainment and maintenance of which in the

judgment of the Administrator, based on such criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air. Such secondary standards may be revised in the same manner as promulgated.

**§ 1857c—5. [§ 110.] State implementation plans for national primary and secondary ambient air quality standards — Submission to Administrator; time for submission; State procedures; required contents of plans for approval by Administrator; approval of revised plan by Administrator**

(a) (1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within nine months after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 1857c—4 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within nine months after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance, and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a

separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.

(2) The Administrator shall, within four months after the date required for submission of a plan under paragraph (1), approve or disapprove such plan or each portion thereof. The Administrator shall approve such plan, or any portion thereof, if he determines that it was adopted after reasonable notice and hearing and that —

(A) (i) in the case of a plan implementing a national primary ambient air quality standard, it provides for the attainment of such primary standard as expeditiously as practicable but (subject to subsection (e) of this section) in no case later than three years from the date of approval of such plan, or any revision thereof to take account of a revised primary standard); and (ii) in the case of a plan implementing a national secondary ambient air quality standard, it specifies a reasonable time at which such secondary standard will be attained;

(B) it includes emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary or secondary standard, including, but not limited to, land-use and transportation controls;

(C) it includes provision for establishment and operation of appropriate devices,

methods, systems, and procedures necessary to (i) monitor, compile, and analyze data on ambient air quality and, (ii) upon request, make such data available to the Administrator;

(D) it includes a procedure, meeting the requirements of paragraph (4), for review (prior to construction or modification) of the location of new sources to which a standard of performance will apply;

(E) it contains adequate provisions for inter-governmental cooperation, including measures necessary to insure that emissions of air pollutants from sources located in any air quality control region will not interfere with the attainment or maintenance of such primary or secondary standard in any portion of such region outside of such State or in any other air quality control region;

(F) it provides (i) necessary assurances that the State will have adequate personnel, funding, and authority to carry out such implementation plan, (ii) requirements for installation of equipment by owners or operators of stationary sources to monitor emissions from such sources, (iii) for periodic reports on the nature and amounts of such emissions; (iv) that such reports shall be correlated by the State agency with any emission limitations or standards established pursuant to this chapter, which reports shall be available at reasonable times for public inspection; and (v) for authority comparable to that in section 1857h—1 of this title, and adequate contingency plans to implement such authority;

(G) it provides, to the extent necessary and practicable, for periodic inspection and testing of motor vehicles to enforce compliance with applicable emission standards; and

(H) it provides for revision, after public hearings, of such plan (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of achieving such primary or secondary standard; or (ii) whenever the Administrator finds on the basis of information available to him that the plan is substantially inadequate to achieve the national ambient air quality primary or secondary standard which it implements.

(3) (A) The Administrator shall approve any revision of an implementation plan applicable to an air quality control region if he determines that it meets the requirements of paragraph (2) and has been adopted by the State after reasonable notice and public hearings.

\* \* \* \*

**Preconditions for preparation and publication by Administrator of proposed regulations setting forth an implementation plan; hearings for proposed regulations; promulgation of regulations by Administrator; transportation regulations study and report; parking surcharge; suspension authority**

(c) (1) The Administrator shall, after consideration of any State hearing record, promptly prepare and publish proposed regu-



lations setting forth an implementation plan, or portion thereof, for a State if —

(A) the State fails to submit an implementation plan for any national ambient air quality primary or secondary standard within the time prescribed,

(B) the plan, or any portion thereof, submitted for such State is determined by the Administrator not to be in accordance with the requirements of this section, or

(C) the State fails within 60 days after notification by the Administrator or such longer period as he may prescribe, to revise an implementation plan as required pursuant to a provision of its plan referred to in subsection (a)(2)(H) of this section.

If such State held no public hearing associated with respect to such plan (or revision thereof), the Administrator shall provide opportunity for such hearing within such State on any proposed regulation. The Administrator shall, within six months after the date required for submission of such plan (or revision thereof), promulgate any such regulations unless, prior to such promulgation, such State has adopted and submitted a plan (or revision) which the Administrator determines to be in accordance with the requirements of this section.

\* \* \* \*

#### **Applicable implementation plan**

(d) For purposes of this chapter, an applicable implementation plan is the

implementation plan, or most recent revision thereof, which has been approved under subsection (a) of this section or promulgated under subsection (c) of this section and which implements a national primary or secondary ambient air quality standard in a State.

\* \* \* \*

#### **§ 1857h—5. Administrative proceedings and judicial review**

\* \* \* \*

(b) (1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard under section 1857c—7 of this title, any standard of performance under section 1857c—6 of this title, any standard under section 1857f—1 of this title (other than a standard required to be prescribed under section 1857f—1 (b) (1) of this title), any determination under section 1857f—1 (b) (5) of this title, any control or prohibition under section 1857f—6c of this title, or any standard under section 1857f—9 of this title may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under section 1857c—5 of this title or section 1857e—6 (d) of this title, or this action under section 1857c—10 (c) (2) (A), (B), or (C) of this title or



under regulations thereunder, may be filed only in the United States Court of Appeals for the appropriate circuit. Any such petition shall be filed within 30 days from the date of such promulgation, approval, or action, or after such date if such petition is based solely on grounds arising after such 30th day.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement.

\* \* \* \*

## APPENDIX E

### ADMINISTRATIVE PROCEDURE ACT

The pertinent section of the Administrative Procedure Act is 5 U.S.C. § 706 (1970) which is as follows:

#### § 706. Scope of review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall —

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be —

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error. Pub.L. 89-554, Sept. 6, 1966, 80 Stat. 393.

## APPENDIX F

Relevant provisions of the Clean Air Act, as amended by the Clean Air Amendments of 1977, 42 U.S.C.A. §§ 7401, *et seq.* (Supp. 1977), are as follows:

### § 7410. State implementation plans for national primary and secondary ambient air quality standards

Adoption of plan by State; submission to Administrator; content of plan; revision; new sources; indirect source review program; supplemental or intermittent control systems

(a) (1) Each State shall, after reasonable notice and public hearings, adopt and submit to the

Administrator, within nine months after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 7409 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within nine months after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance, and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.

(2) The Administrator shall, within four months after the date required for submission of a plan under paragraph (1), approve or disapprove such plan or each portion thereof. The Administrator shall approve such plan, or any portion thereof, if he determines that it was adopted after reasonable notice and hearing and that —

(A) except as may be provided in subparagraph (I) (i) in the case of a plan implementing a national primary ambient air quality standard, it provides for the attainment of such primary standard as expeditiously as practica-

ble but (subject to subsection (e) of this section) in no case later than three years from the date of approval of such plan (or any revision thereof to take account of a revised primary standard); and (ii) in the case of a plan implementing a national secondary ambient air quality standard, it specifies a reasonable time at which such secondary standard will be attained;

(B) it includes emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary or secondary standard, including, but not limited to, transportation controls, air quality maintenance plans, and preconstruction review of direct sources of air pollution as provided in subparagraph (D);

(C) it includes provision for establishment and operation of appropriate devices, methods, systems, and procedures necessary to (i) monitor, compile, and analyze data on ambient air quality and, (ii) upon request, make such data available to the Administrator;

(D) it includes a program to provide for the enforcement of emission limitations and regulation of the modification, construction, and operation of any stationary source, including a permit program as required in parts C and D of this subchapter and a permit or equivalent program for any major emitting facility, within such region as necessary to

assure (i) that national ambient air quality standards are achieved and maintained, and (ii) a procedure, meeting the requirements of paragraph (4), for review (prior to construction or modification) of the location of new sources to which a standard of performance will apply;

(E) it contains adequate provisions (i) prohibiting any stationary source within the State from emitting any air pollutant in amounts which will (I) prevent attainment or maintenance by any other State of any such national primary or secondary ambient air quality standard, or (II) interfere with measures required to be included in the applicable implementation plan for any other State under part C of this subchapter to prevent significant deterioration of air quality or to protect visibility, and (ii) insuring compliance with the requirements of section 7426 of this title, relating to interstate pollution abatement;

(F) it provides (i) necessary assurances that the State will have adequate personnel, funding, and authority to carry out such implementation plan; (ii) requirements for installation of equipment by owners or operators of stationary sources to monitor emissions from such sources; (iii) for periodic reports on the nature and amounts of such emissions; (iv) that such reports shall be correlated by the State agency with any emission limitations or standards established pursuant to this chapter, which reports shall be available at reasonable times for public inspection; (v) for authority comparable to that in section 7603 of this title,

and adequate contingency plans to implement such authority; and (vi) requirements that the State comply with the requirements respecting State boards under section 7428 of this title;

(G) it provides, to the extent necessary and practicable, for periodic inspection and testing of motor vehicles to enforce compliance with applicable emission standards;

(H) it provides for revision, after public hearings, of such plan (i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or more expeditious methods of achieving such primary or secondary standard; or (ii) except as provided in paragraph (3) (C), whenever the Administrator finds on the basis of information available to him that the plan is substantially inadequate to achieve the national ambient air quality primary or secondary standard which it implements or to otherwise comply with any additional requirements established under the Clean Air Act Amendments of 1977;

(I) it provides that after June 30, 1979, no major stationary source shall be constructed or modified in any nonattainment area (as defined in section 7501 (2) of this title) to which such plan applies, if the emissions from such facility will cause or contribute to concentrations of any pollutant for which a national ambient air quality standard is exceeded in such area, unless, as of the time of application for a permit for such construction or modifica-



tion, such plan meets the requirements of part D of this subchapter (relating to nonattainment areas);

(J) it meets the requirements of section 7421 of this title (relating to consultation), section 7427 of this title (relating to public notification), part C of this subchapter (relating to prevention of significant deterioration of air quality and visibility protection); and

(K) it requires the owner or operator of each major stationary source to pay to the permitting authority as a condition of any permit required under this chapter a fee sufficient to cover —

(i) the reasonable costs of reviewing and acting upon any application for such a permit, and

(ii) if the owner or operator receives a permit for such source, whether before or after August 7, 1977, the reasonable costs (incurred after August 7, 1977) of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action).

(3) (A) The Administrator shall approve any revision of an implementation plan applicable to an air quality control region if he determines that it meets the requirements of paragraph (2) and has been adopted by the State after reasonable notice and public hearings.

\* \* \* \*

**Preparation and publication by Administrator of proposed regulations setting forth implementation plan; transportation regulations study and report; parking surcharge; suspension authority; plan implementation**

(c) (1) The Administrator shall, after consideration of any State hearing record, promptly prepare and publish proposed regulations setting forth an implementation plan, or portion thereof, for a State if —

(A) the State fails to submit an implementation plan which meets the requirements of this section.

(B) the plan, or any portion thereof, submitted for such State is determined by the Administrator not to be in accordance with the requirements of this section, or

(C) the State fails, within 60 days after notification by the Administrator or such longer period as he may prescribe, to revise an implementation plan as required pursuant to a provision of its plan referred to in subsection (a) (2) (H) of this section.

If such State held no public hearing associated with respect to such plan (or revision thereof), the Administrator shall provide opportunity for such hearing within such State on any proposed regulation. The Administrator shall, within six months after the date required for submission of such plan (or revision thereof), promulgate any such regulations unless, prior to such promulgation, such State has adopted and submitted a



plan (or revision) which the Administrator determines to be in accordance with the requirements of this section. Notwithstanding the preceding sentence, any portion of a plan relating to any measure described in the first sentence of section 7421 of this title (relating to consultation) or the consultation process required under such section 7421 shall not be required to be promulgated before the date eight months after such date required for submission.

\* \* \* \*

#### **Applicable implementation plan**

(d) For purposes of this chapter, an applicable implementation plan is the implementation plan, or most recent revision thereof, which has been approved under subsection (a) of this section or promulgated under subsection (c) of this section and which implements the requirements of this section.

\* \* \* \*

#### **§ 7413. Federal enforcement procedures**

**Finding of violation; notice; compliance order; civil action; State failure to enforce plan; construction or modification of major stationary sources**

(a) (1) Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of any requirement of an applicable implementation plan, the Administrator shall notify the person in violation

of the plan and the State in which the plan applies of such finding. If such violation extends beyond the 30th day after the date of the Administrator's notification, the Administrator may issue an order requiring such person to comply with the requirements of such plan or he may bring a civil action in accordance with subsection (b) of this section.

(2) Whenever, on the basis of information available to him, the Administrator finds that violations of an applicable implementation plan are so widespread that such violations appear to result from a failure of the State in which the plan applies to enforce the plan effectively, he shall so notify the State. If the Administrator finds such failure extends beyond the 30th day after such notice, he shall give public notice of such finding. During the period beginning with such public notice and ending when such State satisfies the Administrator that it will enforce such plan (hereafter referred to in this section as "period of federally assumed enforcement"), the Administrator may enforce any requirement of such plan with respect to any person —

(A) by issuing an order to comply with such requirement, or

(B) by bringing a civil action under subsection (b) of this section.

(3) Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of section 7411 (e) of this title (relating to new source performance standards), section 7412 (c) of this title (relating

to standards for hazardous emissions), or section 119 (g) (relating to energy-related authorities) is in violation of any requirement of section 7414 of this title (relating to inspections, etc.), he may issue an order requiring such person to comply with such section or requirement, or he may bring a civil action in accordance with subsection (b) of this section.

(4) An order issued under this subsection (other than an order relating to a violation of section 7412 of this title) shall not take effect until the person to whom it is issued has had an opportunity to confer with the Administrator concerning the alleged violation. A copy of any order issued under this subsection shall be sent to the State air pollution control agency of any State in which the violation occurs. Any order issued under this subsection shall state with reasonable specificity the nature of the violation, specify a time for compliance which the Administrator determines is reasonable, taking into account the seriousness of the violation and any good faith effort to comply with applicable requirements. In any case in which an order under this subsection (or notice to a violator under paragraph (1) is issued to a corporation, a copy of such order (or notice) shall be issued to appropriate corporate officers.

(5) Whenever, on the basis of information available to him, the Administrator finds that a State is not acting in compliance with any requirement of the regulation referred to in section 129 (a) (1) of the Clean Air Act Amendments of 1977 (relating to certain interpretative regula-

tions) or any plan provisions required under section 7410 (a) (2) (I) of this title and part D of this subchapter, he may issue an order prohibiting the construction or modification of any major stationary source in any area to which such provisions apply or he may bring a civil action under subsection (b) (5) of this section.

#### **Violations by owners or operators of major stationary sources**

(b) The Administrator shall, in the case of any person which is the owner or operator of a major stationary source, and may, in the case of any other person, commence a civil action for a permanent or temporary injunction, or to assess and recover a civil penalty of not more than \$25,000 per day of violation, or both, whenever such person —

(1) violates or fails or refuses to comply with any order issued under subsection (a) of this section; or

(2) violates any requirements of an applicable implementation plan (A) during any period of Federally assumed enforcement, or

(B) more than 30 days after having been notified by the Administrator under subsection (a) (1) of this section of a finding that such person is violating such requirement; or

(3) violates section 7411 (e) of this title, section 7412 (c) of this title, section 119 (g) (as in effect before August 7, 1977), subsection (d) (5) of this (section relating to coal conversion), section 7624 of this title (relating to cost of certain vapor

recovery), section 7419 of this title (relating to smelter orders), or any regulation under part B of this subchapter (relating to ozone); or

(4) fails or refuses to comply with any requirement of section 7414 of this title or subsection (d) of this section; or

(5) attempts to construct or modify a major stationary source in any area with respect to which a finding under subsection (a) (5) of this section has been made.

The Administrator may commence a civil action for recovery of any noncompliance penalty under section 7420 of this title or for recovery of any nonpayment penalty for which any person is liable under section 7420 of this title or for both. Any action under this subsection may be brought in the district court of the United States for the district in which the violation occurred or in which the defendant resides or has his principal place of business, and such court shall have jurisdiction to restrain such violation, to require compliance, to assess such civil penalty and to collect any noncompliance penalty (and nonpayment penalty) owed under section 7420 of this title. In determining the amount of any civil penalty to be assessed under this subsection, the courts shall take into consideration (in addition to other factors) the size of the business, the economic impact of the penalty on the business, and the seriousness of the violation. Notice of the commencement of such action shall be given to the appropriate State air pollution control agency. In the case of any action brought by the

Administrator under this subsection, the court may award costs of litigation (including reasonable attorney and expert witness fees) to the party or parties against whom such action was brought in any case where the court finds that such action was unreasonable.

### Penalties

(c) (1) Any person who knowingly —

(A) violates any requirement of an applicable implementation plan (i) during any period of Federally assumed enforcement, or (ii) more than 30 days after having been notified by the Administrator under subsection (a) (1) of this section that such person is violating such requirement, or

(B) violates or fails or refuses to comply with any order under section 7419 of this title or under subsection (a) or (d) of this section, or

(C) violates section 7411 (e), section 7412 (c) of this title; or

(D) violates any requirement of section 119 (g) (as in effect before August 7, 1977), subsection (b) (7) or (d) (5) of section 7420 of this title (relating to noncompliance penalties), or any requirement of part B of this subchapter (relating to ozone).

shall be punished by a fine of not more than \$25,000 per day of violation, or by imprisonment for not more than one year, or by both. If the conviction is for a violation committed after the first conviction of such person under this parag-

raph, punishment shall be by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two years, or by both.

(2) Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this chapter or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this chapter; shall upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six months, or by both.

(3) For the purpose of the subsection, the term "person" includes, in addition to the entities referred to in section 7602 (e) of this title, any responsible corporate officer.

\* \* \* \*

#### § 7607

\* \* \* \*

#### Judicial review

(b) (1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard or requirement under section 7412 of this title, any standard of performance or requirement under section 7411 of this title, any standard under section 7512 of this title (other than a standard required to be prescribed under section 7521 (b) (i) of this title) any determination under section 7521 (b) (5) of

this title, any control or prohibition under section 7545 of this title, any standard under section 7571 of this title, any rule issued under section 7413, 7419, or 7420 of this title, or any other nationally applicable regulations promulgated, or final action taken, by the Administrator under this chapter may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under section 7410 of this title or section 7411 (d) of this title, any order under section 7411 (j) of this title, under section 7412 (c) of this title, under section 7413 (d) of this title, under section 7419 of this title, or under section 7420 of this title, or his action under section 119 (c) (2) (A), (B), or (C) (as in effect before August 7, 1977) or under regulations thereunder, or any other final action of the Administrator under this chapter (including any denial or disapproval by the Administrator under subchapter I of this chapter) which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. Notwithstanding the preceding sentence a petition for review of any action referred to in such sentence may be filed only in the United States Court of Appeals for the District of Columbia if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination. Any petition for review under this subsection shall be filed within sixty days from the date notice of such pro-



mulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement.

\* \* \* \*

(9) In the case of review of any action of the Administrator to which the subsection applies, the court may reverse any such action found to be —

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; or

(D) without observance of procedure required by law, if (i) such failure to observe such procedure is arbitrary or capricious, (ii) the requirement of paragraph (7) (B) has been met, and (iii) the condition of the last sentence of paragraph (8) is met.

(10) Each statutory deadline for promulgation of rules to which the subsection applies which requires promulgation less than six months after

date of proposal may be extended to not more than six months after date of proposal by the Administrator upon a determination that such extension is necessary to afford the public, and the agency, adequate opportunity to carry out the purposes of this subsection.

(11) The requirements of this subsection shall take effect with respect to any rule the proposal of which occurs after ninety days after August 7, 1977.

\* \* \* \*

#### § 7620. Standardized air quality modeling

##### Conferences

(a) Not later than six months after August 7, 1977, and at least every three years thereafter, the Administrator shall conduct a conference on air quality modeling. In conducting such conference, special attention shall be given to appropriate modeling necessary for carrying out part C of subchapter I of this chapter (relating to prevention of significant deterioration of air quality).

##### Conferees

(b) The conference conducted under this section shall provide for participation by the National Academy of Sciences, representatives of State and local air pollution control agencies, and appropriate Federal agencies, including the National Science Foundation; the National Oceanic and Atmospheric Administration, and the National Bureau of Standards.

**Comments; transcripts**

(c) Interested persons shall be permitted to submit written comments and a verbatim transcript of the conference proceedings shall be maintained.

**Promulgation and revision of regulations  
relating to air quality modeling**

(d) The comments submitted and the transcript maintained pursuant to subsection (c) of this section shall be included in the docket required to be established for purposes of promulgating or revising any regulation relating to air quality modeling under part C of subchapter I of this chapter.

**APPENDIX G**

The Fifth Amendment to the Constitution of the United States is as follows:

**Amendment V**

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

**APPENDIX H**

On November 10, 1975, EPA proposed an SO<sub>2</sub> plan for the State of Ohio. 40 *Fed Reg* 52410 (1975). On August 27, 1976, EPA promulgated its SO<sub>2</sub> plan for Ohio. 41 *Fed. Reg.* 36324 (1976). On November 12, 1976, the Sixth Circuit stayed that August 27th promulgation and remanded it to EPA. On May 31, 1977, EPA published its response to that remand. 42 *Fed. Reg.* 37588. In relevant part, the foregoing regulations are set forth below. First, however, relevant portions of the preambles preceeding them are set forth by date.

**1. Preamble, May 31, 1977; 42 Fed. Reg. 37588.**

**Title 40 — Protection of the Environment**

**CHAPTER I — ENVIRONMENTAL  
PROTECTION AGENCY**

[FRL 788-7]

**SUBCHAPTER C — AIR PROGRAMS**

**PART 5 — APPROVAL AND PROMULGATION OF  
IMPLEMENTATION PLANS**

**Ohio-Sulfur Dioxide Plan**

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This final rule is an amendment to the federally promulgated Ohio State Implementaton Plan for Sulfur Dioxide. The amendment is a result of comments made in response to an Order for

reconsideration issued by the United States Court of Appeals for the Sixth Circuit on November 12, 1976 in *Buckeye Power, Inc., et al. v. Environmental Protection Agency*, No. 76-2099 et al.

EFFECTIVE DATE: May 31, 1977.

FOR FURTHER INFORMATION CONTACT:

Jack Chicca, Chief, Air Programs Branch, Region V, U.S. Environmental Protection Agency, 230 South Dearborn, Chicago, Ill. 60604.

SUPPLEMENTARY INFORMATION:

On August 27, 1976, the U.S. Environmental Protection Agency promulgated a regulation for the control of sulfur dioxide in Ohio (41 FR 36324). Corrections to the plan were made on November 30, 1976 (41 FR 52455). Thirty-six petitions for review were filed with the United States Court of Appeals for the Sixth Circuit pursuant to Section 307 of the Clean Air Act Amendments of 1970. Following a prehearing conference on motions to stay, the Court on November 12, 1976, entered a stay of enforcement of the regulation for petitioners and ordered the Agency to (i) reopen the administrative record, allowing petitioners to further comment on the regulation, and (ii) amend the regulations as necessary. This notice sets forth those amendments to the regulation justified by petitioners' comments.

The Agency received forty-two individual comments. The Agency considered all of the comments and supporting materials and reevaluated the regulation in light of this information. The Agency determined that the changes set forth in this action were warranted based on computational or transpositional errors in the

original data base. The Agency's analysis of the comments is set forth in a supplemental technical support document (STSD), dated May 27, 1977. This analysis reflects the Administrator's judgments on the appropriateness and meritoriousness (or lack thereof) of the comments and is incorporated herein by this reference. The STSD is available at the USEPA Public Information Reference Unit, Rm. 2922, 401 M Street SW., Washington, D.C. 20460. It may also be obtained (or inspected) at the USEPA Region V office, Air and Hazardous Materials Division, Eleventh Floor, 280 S. Dearborn, Chicago, Illinois.

The Agency has reconsidered the appropriate attainment date and compliance schedules for those sources subject to the period of reconsideration and attendant stay of enforcement granted by the Court of Appeals and has determined that the appropriate attainment date for all petitioners listed in § 52.1375 footnote f should now be three years from June 17, 1977. This date was derived as follows: First, it was recognized that, under § 110(a) (2) of the Act, attainment of the primary standards may be no later than three years from the date of promulgation. For those sources affected by the Court's order of November 12, 1976, the Agency considered a promulgation date of May 27, 1977. It was on this date that the Agency issued its response to the comments provided for by the Court's order, thereby finalizing the rulemaking for these sources. However, this would have ignored the fact that the Court's order delayed the effectiveness of the regulations for a period extending 21 days beyond the Agency's response.

Taking these 21 days into account and given the unusual circumstances of this case, the Agency

concluded that a promulgation date of June 17, 1977, was appropriate. Three years from this date is June 17, 1980.

For petitioners only, the Agency is removing from the fossil fuel-fired steam-generating unit compliance schedule the eight-week requirement for electing the intended mode of compliance. Instead petitioners will have 17 weeks to make this election. It is the expectation of the Agency that this additional time will enable such sources to make a more informed judgment as to whether compliance should be achieved through fuel adjustments, e.g., the burning of low sulfur coal, or the use of mechanical coal washing or coal blending, or through pollution control equipment such as scrubbers. (A similar revision is not required for petitioning process sources since such sources are not confronted with the need to make an election.) The removal of this increment does not affect the ability to comply with the final compliance date since it is expected that research and, perhaps, preliminary design work on all viable options will be taking place while petitioners are deciding which option to choose. As is the case with the new attainment date being established for such sources, the new compliance schedules applicable to them will not begin to run until June 17, 1977. To reflect this, a new paragraph has been added to § 52.1882.

In addition, the Agency gives notice to those sources electing to comply by use of low sulfur fuel that it is the enforcement policy of the Agency to require sources that elect to comply with the regulation by switching to low sulfur coal to show that they will remain in compliance with Ohio's State Plan for particulate matter. The attainment date for particulate matter is April 15, 1977. This policy is necessitated by the fact that under certain conditions switching to low sulfur

coal normally increases particulate emissions and requires upgrading controls for particulate matter.

The Administrator has determined that the amended regulation remains consistent with current EPA policies and meets the goals set forth in section 110 (c) of the Clean Air Act Amendments of 1970 and Agency regulations in 40 CFR Part 51.

(42 U.S.C. 1357c-5.)

Dated: May 24, 1977.

DOUGLAS M. COSTLE,  
Administrator.

Part 52 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

Subpart KKK — Ohio

**2. Preamble, August 27, 1976; 41 Fed. Reg. 36324.**

**Title 40 — Protection of the Environment**

[FRL 605-8]

**CHAPTER I — ENVIRONMENTAL  
PROTECTION AGENCY**

**SUBCHAPTER C — AIR PROGRAMS**

**PART 52 — APPROVAL AND PROMULGATION OF  
IMPLEMENTATION PLANS**

**Ohio-Sulfur Dioxide Plan**

On January 30, 1972, the Governor of Ohio submitted the "Implementation Plan for the Control of Suspended Particulate, Sulfur Dioxide, Carbon Monoxide, Hydrocarbons, Nitrogen Dioxide, and Photochemical Oxidants in the State of Ohio" to the Administrator of



the Environmental Protection Agency. The plan was adopted by the Ohio Air Pollution Control Board following public hearings held on January 18, 1972, in Columbus, Ohio. This plan was submitted pursuant to Section 110 of the Clean Air Act, as amended, which requires States to adopt implementation plans to achieve and maintain the national ambient air quality standards (40 CFR Part 60). On May 31, 1972 (37 FR 10842), the Administrator approved the Ohio plan with specific exceptions. Subsequently, amendments were submitted which permitted full approval of the plan on September 22, 1972 (37 FR 19806).

On June 28, 1973, the United States Court of Appeals for the Sixth Circuit decided the case of *Buckeye Power Company, et al. v. EPA*, 481 F2d 162. The court vacated the Administrator's approval of the Ohio plan and remanded the case to the Agency for compliance with Section 553 of the Administrative Procedure Act, as articulated in the court's opinion, viz., to take comments, data or other evidence from interested parties, and to express the basis for ensuing administrative actions.

On August 27, 1973, the Governor of Ohio withdrew from the proposed Ohio plan the control strategy and regulations for control of sulfur dioxide. The remainder of the plan was proposed on November 15, 1973 (38 FR 31543) and was approved on April 15, 1974 (39 FR 13530), with specific exceptions. Because the Governor of Ohio withdrew the originally submitted control strategy and regulations for control of sulfur dioxide, the plan was disapproved in that respect.

On May 30, 1974, the Governor of Ohio submitted a proposed sulfur dioxide strategy and regulations to the Administrator to cure the defects in the Ohio Implementation plan noted in the April 15, 1974,

FEDERAL REGISTER, cited above. However, on September 13, 1974, the Ohio Environmental Board of Review overturned a portion of these regulations, thereby rendering same unenforceable. Since the plan for control of sulfur oxides could no longer be effectuated as designed by the State, the Administrator deemed at an ineffective submission and no further rulemaking action was taken. The Governor of Ohio formally withdrew the proposed regulations on July 16, 1975.

Where the Administrator determines that a State plan or portions thereof do not meet the requirements of the Clean Air Act as amended, and 40 CFR Part 51, he is directed by Section 110(c) of the Act to propose and subsequently promulgate regulations setting forth a substitute implementation plan or portion thereof. Accordingly, on November 10, 1975, the Administrator proposed such as alternate plan for the control of emissions of sulfur dioxide in the State of Ohio (40 FR 52410 et seq). Hearings on the proposed rules were conducted by the Environmental Protection Agency in Cincinnati (December 18, 1975), Cleveland (January 6, 1976), Steubenville (January 8, 1976), and Columbus (January 13 and 14, 1976). Interested parties presented their comments at these hearings and through the mail. Each comment was carefully considered. In several cases, being responsive to comments necessitated a modification of the proposed regulation. The final rules as published herein are, however, completely in character with the original scheme. Each deviation from the proposed regulation resulted directly from public comment and/or a more precise, sophisticated method of analyzing the data.

Set forth below are the substitute sulfur dioxide control regulations designed to attain and maintain the

ambient standards for sulfur dioxide in Ohio thereby correcting the deficiency in the Ohio Implementation Plan listed above. The maintenance portion of the plan is based on projected growth over the next ten years and the degree of control required of existing sources reflects the projected emission increase.

Because of the exceptional circumstances that surround this rulemaking, i.e., the vacation of the Administrator's original plan approval and the inability of the State to thereafter submit an approvable sulfur dioxide strategy, the rulemaking contemplated herein effectively constitutes the first federally operative plan for controlling sulfur dioxide within the State. Consistent, therefore, with the Clean Air Act's injunction that primary ambient standards be attained within three years of plan approval (or such earlier time as may be practicable), the attainment date promulgated herein is three years from this effective date of these regulations. Not all sources will require a full three years in order to achieve compliance; in given cases "expeditious as practicable" compliance may require compliance far in advance of the attainment date.

#### CONTROL STRATEGY DESCRIPTION

The control strategy promulgated today to attain and maintain the sulfur dioxide ambient air quality standards in Ohio was developed through both county-by-county and facility-specific analyses of air quality to determine the existence and severity of any sulfur dioxide problems. Where air quality problems were identified, appropriate regulations were developed for specific counties, groups of sources, or individual sources as necessitated by the extent of the air quality problem.

Growth projections were made for all areas through 1985, with the projected impact of such growth included in the developed control strategy. Within the eighty-eight counties comprising the state, approximately 150 individual facilities have been specifically identified for control. In addition, thirty-three counties were identified as possessing no existing or potential sulfur dioxide air quality problems from existing sources inasmuch as existing sources in those counties do not adversely affect air quality standards. No controls are being promulgated for sources located in these counties. However, it should be noted that, where applicable, sources in these counties will still be subject to state new source review requirements, federal new source performance standards, and non-significant deterioration requirements.

In response to public comments received regarding the application of county-wide emission limitations, which were derived from the analysis of a single isolated facility or group of facilities in that county, individual facilities in counties are now being specifically identified for control. No controls are being promulgated for the remaining sources in those counties for the same reasoning applied to the thirty-three uncontrolled counties referenced above. For the remaining counties, the promulgated control strategy establishes specific industrial process limitations for identified industry categories and/or a general industrial process requirement. In addition, fuel combustion sources are required to meet specified emission limitations as a function of the rated capacity and location. Certain sources have made representations to close down within the next 3 years — for these sources a zero emission rate was used in the dispersion

modeling and is promulgated in the following rules. Should the present or any subsequent owner or operator desire to continue in operation any such source, the Administrator will consider a petition to establish an appropriate emission limitation.

\* \* \* \*

#### FUEL COMBUSTION REGULATIONS

In developing the final fuel combustion emission limitations, the Administrator reexamined the major fuel burning installations within each county in the state to reassess the degree of control required, if any, in light of public comments received. The final regulations are expressed in terms of pounds of SO<sub>2</sub> emitted per million BTU of heat input. Again, as with the industrial process regulations, the emission limitations vary from county to county and are both general and facility-specific depending upon the particular pollution problems, the size and distribution of the facilities, and the required overall emission reductions.

Several refinements were made to the methodologies applied to the various urban areas in Ohio, in arriving at the final emission limitations. For the Youngstown (Mahoning and Trumbull Counties), Cincinnati (Hamilton County), and Steubenville (Jefferson County) areas, the methodology utilized in the development of the proposed regulations (i.e., the "linear rollback" concept) was modified to more accurately assess air quality impacts by source category. Individual major facilities were also examined separately with computer dispersion models to arrive at the final facility-specific emission limitations. However, dispersion model techniques could not be applied on a broad basis in these areas due to the effects of the surrounding terrain.

In the Cleveland (Cuyahoga, Lake and Lorain Counties), Akron (Summit County), Toledo (Lucas County), Dayton (Montgomery County), Columbus (Franklin County) and Canton (Stark County) areas, refined, more sophisticated modelling techniques were applied to develop the final emission limitations. The revised methodologies were utilized to provide a more accurate assessment of the impact of source emissions on both the annual and short term air quality standards. No emission limitations are being promulgated for sources with capacities less than 10 million BTU per hour of heat input as these sources were found to have an insignificant impact upon air quality.

For all major isolated fuel combustion facilities in Ohio where no pollutant/plume interaction could be found between a particular facility and any surrounding facilities, control options are being included in the final emission limitations. These options are such that the source owner or operator may choose (within a specified period of time) between a uniform emission limitation applicable to all stacks at that facility or a series of stack-specific emission limitations. The latter choice provides for maximum flexibility of emission control sufficient to assure the attainment and maintenance of the air quality standards, coupled with the potential for minimum economic impact on a particular facility. Choosing an option will not relieve a source of the duty to comply with applicable emission limits as expeditiously as practicable but no later than the attainment date.

#### PUBLIC COMMENTS RECEIVED

The Agency believes that its responsibility following the public hearings and the period for comment is to



consider seriously each and every piece of information and in certain justifiable instances, modify the regulations in reliance thereon. The Agency carried out that duty. Each modification to the proposed rule making has been made as the direct result of a specific comment thereon, as the result of a more detailed data base or as a result of a more exact, sophisticated modeling technique than was used in the proposal. None of these modifications, however, has substantively altered the character of the original regulatory scheme, and the Administrator has therefore determined that the need for further hearings or comments is obviated. As the U.S. Court of Appeals for the first Circuit stated in *South Terminal Corp. v. EPA*, 504 F2d 646 (1974) "A hearing is intended to educate an agency to approaches different from its own and in shaping the final rule it may and should draw on the comments tendered . . . Parties have no right to insist that a rule remain frozen in its vestigial form." The Court of Appeals for the District of Columbia recently said: "The requirement of submission of a proposed rule for comment does not automatically generate a new opportunity for comment merely because the rule promulgated by the Agency differs from the rule it proposed, partly at least, in response to submissions. A contrary rule would lead to the absurdity that in rule-making under the APA the Agency can learn from the comments on its proposals only at the peril of starting a new procedural round of commentary" (*International Harvester v. Ruckelshaus*, 475 F2d 615(1973)).

Set forth below in summary form is a discussion of the action taken by the agency in response to the knowledge gained by the agency as a result of public

participation in the rulemaking process. A more detailed description of the difference between the proposal and the promulgation is set forth in the Executive Summary to the Technical Support Document.

The proposal was criticized for failure to use all available air quality data and for use of invalid or erroneous air quality data in developing the regulations. Therefore, the Agency reassessed all state, local and private industry data including data submitted during the public comment period in order to secure the most complete air quality data base possible in the circumstances.

The proposal was also criticized for use of erroneous emission data for both point and area sources in determining necessary controls. Accordingly, the Environmental Protection Agency reexamined all state and local agency data previously used and reviewed any new data submitted during the public comment period. Additionally, many facilities were specifically contacted to obtain the most accurate, up-to-date emission data. These tasks were undertaken to secure the most complete and accurate emission data available at this time.

The proposal was criticized for using "pre-designed" regulations since they resulted in substantial over-control in some instances. EPA modified the "Control Strategy Forecast Program" and developed the analytical tools mentioned below so that control requirements could be tailored to the source's contribution to ambient air quality and considerations of facility size in order to minimize over-control to the maximum extent possible.



The proposal was criticized for use of a proportional modeling technique (a/d/a "rollback") in some urban areas to determine necessary controls therein. With considerable effort, the Agency was able to identify and utilize more sophisticated analytical tools in developing urban strategies, such as an urban short-term model (RAM) and a modified "roll-back" technique which is used in conjunction with source-specific dispersion modeling. This investigation was commenced so that EPA would use the most sophisticated analytical tools available in determining needed controls in the state's urban areas.

The proposal was criticized for use of a single SO<sub>2</sub> ambient air background value (concentration resulting from natural and/or area sources) throughout Ohio in developing the control strategy. The Agency responded to this comment by developing county-specific background values where possible and extrapolating SO<sub>2</sub> isopleths in areas where ambient air concentrations of SO<sub>2</sub> had not been measured, in order to assign the most pertinent background values possible to the various areas of the state, given the available information.

The proposal was criticized for using "value-added" source parameters in estimating industrial emissions growth to determine the need for controls in maintaining air quality standards. EPA and Ohio examined other methods of estimating emissions growth and reconfirmed the superiority of the "value added" approach. The Agency attempted to refine the results of this technique by collecting additional data from various State and major urban planning agencies in Ohio. These refinements were sought to assure maintenance of standards by the most reliable method available at this time.

Several local agencies criticized the proposed regulations because they would permit certain sources to emit greater amounts of SO<sub>2</sub> than would local regulations covering the same sources. The Administrator recognizes and respects the rights of any State or political subdivision thereof to adopt or enforce emission standards stricter than those required to achieve national ambient air quality standards. Whether adopted to allow for greater growth or as additional safeguards to the public health and welfare, the Administrator encourages continued enforcement of those local regulations. Nonetheless in formulating the regulations herewith promulgated, the Administrator was required to adhere to the standards set forth at § 110 of the Act.

### MALFUNCTIONS

The proposed regulations did not include a section dealing with malfunctions, and the preamble requested comments on how the problem of malfunctions could be addressed. Several commenters offered sample regulations or suggested regulations presently utilized in other states as a means of dealing with the malfunction problem. After reviewing the comments, the Administrator has concluded that to penalize a prudent operator for emissions that are beyond his control is unreasonable. The issuance of an administrative order or the initiation of judicial action following a period of excess emission caused by circumstances beyond the control of the operator is not appropriate. However, automatic exemption for these periods of unavoidable excess emissions are also not appropriate.

The Administrator recognizes that some relief should be afforded during certain upset conditions, but the promulgation of an upset regulation could serve as a disincentive to develop better operating and maintenance procedures. The Administrator has concluded that malfunctions and upsets beyond the reasonable control of an operator can be raised in the context of a Section 113 enforcement proceeding and prior to the issuance of an administrative order. When a Notice of Violation is issued to an operator for a violation resulting from a malfunction or upset condition, the Administrator will consider any information developed by the source which more fully explains the circumstances of the violation, its seriousness, and efforts of the operator to comply. If the Administrator determines that the subject equipment was well maintained and operated, was repaired expeditiously, and that excess emissions were minimized, no further action would be warranted. In the Administrator's view this approach both encourages good operating practice and provides a forum for mitigating evidence in the context of the Agency's enforcement process.

#### COMPLIANCE SCHEDULES

The regulations include categorical compliance schedules to be utilized by sources to attain compliance. Because this promulgation allows certain sources an "optional emission limitation" a provision has been added requiring notice to the Administrator of the option selected within eight weeks of promulgation. Alternate schedules may be submitted at the same time

for approval by sources desiring to adjust the increments of progress within the promulgated schedules. Any source owner or operator failing to notify the Administrator of his selection within the allowed eight weeks will be subject to the specific emission limitation identified in the regulations. The Agency reserves the right to specify shorter schedules for those sources which can comply more expeditiously than the three year time frame.

The final regulations delete the requirement that sources sign contracts for fuel supplies for a minimum period of ten years. This change flows from a number of comments strongly questioning the propriety of requiring firm contracts for ten year supplies of coal. The above requirement relieves small fuel users of the necessity of committing resources for a long period. However, sources electing to comply by fuel changes must demonstrate that sufficient complying fuel can realistically be expected to be available. In cases of large coal users (generally utilities and utility size fuel users), the required demonstration may include a contract document. This distinction is consistent with the practice of utility and large industrial users of 10 years of contracting for fuel supplies at least ten years in advance of their needs.

#### TECHNICAL AND ECONOMIC FEASIBILITY

The proposal was criticized for failure to consider technological and economic feasibility in developing the proposed regulations. Although these factors were considered in developing this proposal, the Agency responded to this criticism by providing for site visits to twenty industrial or utility facilities. The bulk of this

work was performed by a contractor pursuant to EPA specifications. The studies provide a basis for determining the feasibility of the final regulations and indicate that most site specific difficulties can be overcome. A detailed assessment of the technical feasibility of these regulations is included in the technical support document.

Consistent with the recent Sixth Circuit decision (*Big Rivers Electric Corp. at al. v. EPA*, 523 F. 2d 16 (1975), cert denied. — U.S. — April 19, 1976), the proposed plan prohibits the operation of a source of pollutant emissions beyond three years from promulgation "without the application of one or more systems which control the 'kind and amounts' of its air contaminant emissions." The Sixth Circuit Court of Appeals reasoned that, absent a showing that measures which qualify as emission limitations (see *Train v. NRDC*, 43 L. Ed. 2d 731, 745, 1975, defining emission limitations as "regulation of the composition of substances emitted into the ambient air") are unavailable, the Administrator cannot approve (or, therefore, promulgate) measures other than emission limitations. Cf. *Big Rivers v. EPA*, 523 F. 2d at 22. Consistent with the Court's opinion, this rulemaking contains only emission limitations since, in the Administrator's judgment, such limitations are not only capable of attaining national standards but are also achievable through application of available technology.

Review of the record developed in this action reveals that all affected sources will be able to meet the established requirements. However, it may be, in exceptional circumstances, that available technology when applied to a given source will not achieve the applicable emission limitation. In such cases, the Administrator will consider a petition for a plan

revision to those sources qualifying under the Agency policy set fourth at 41 FR 7450 on February 18, 1976. Such petitions should be submitted no later than 60 days after promulgation, should be adequately documented and will, under no circumstances, permit extension of the final compliance date.

#### INFLATION IMPACT STATEMENT

The Agency was criticized for failure to propose an inflation impact statement in connection with the proposed rules. The Agency's position in response to the President's order came out about the same time the proposal did and it was not possible to prepare a statement for the proposed regulations. In connection with determinations on the final rulemaking, EPA collected various types of information from the State of Ohio which have been used in conjunction with information gathered from the site visits to prepare an inflation impact statement which will be available for public inspection at (1) the Air Programs Branch, Air and Hazardous Materials Division, EPA Region V, 230 South Dearborn, Chicago, Illinois 60604; (2) the U.S. EPA Public Information Reference Unit, Room 2922, 401 M Street, S.W., Washington, D.C. 20460; and (3) the Council on Wage and Price Stability, Washington, D.C. 20503.

It is hereby certified that the economic and inflationary impacts of this regulation have been carefully evaluated in accordance with OMB Circular A-107.



3. Preamble, November 10, 1975; 40 Fed. Reg. 52410 (1975).

# ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 52]

[FRL 453-5]

## OHIO

### Approval and Promulgation of State Implementation Plans, Sulfur Dioxide

On January 30, 1972, the Governor of Ohio submitted the "Implementation Plan for the Control of Suspended Particulate, Sulfur Dioxide, Carbon Monoxide, Hydrocarbons, Nitrogen Dioxide, and Photochemical Oxidants in the State of Ohio" to the Administrator of the Environmental Protection Agency. The plan was adopted by the Ohio Air Pollution Control Board following public hearings held on January 18, 1972, in Columbus, Ohio. This plan was submitted pursuant to Section 110 of the Clean Air Act, as amended, which requires States to adopt implementation plans to achieve and maintain the national ambient air quality standards (40 CFR Part 50). On May 31, 1972 (37 FR 10842), the Administrator approved the Ohio plan with specific exceptions. Subsequently, amendments were submitted which permitted full approval of the plan on September 22, 1972 (37 FR 19806).

On June 23, 1973, the United States Court of Appeals for the Sixth Circuit decided the case of *Buckeye Power Company, et al. v. EPA*, 431 F.2d 162. The court vacated the Administrator's approval of the Ohio plan and remanded the case to the Agency for compliance with section 553 of the Administrative Procedure Act, as articulated in the court's opinion, viz., to take

comments, data or other evidence from interested parties, and to express the basis for ensuing administrative actions.

On August 27, 1973, the Governor of Ohio withdrew from the proposed Ohio plan the control strategy and regulations for control of sulfur dioxide. The remainder of the plan was proposed on November 15, 1973 (38 FR 31543) and was approved on April 15, 1974 (39 FR 13539), with specific exceptions. Because the Governor of Ohio withdrew the originally submitted control strategy and regulations for control of sulfur dioxide, the plan was disapproved in that respect.

On May 30, 1974, the Governor of Ohio submitted a proposed sulfur dioxide strategy and regulations to the Administrator to cure the defects in the Ohio Implementation Plan noted in the April 15, 1974 FEDERAL REGISTER, cited above. However, on September 13, 1974, the Ohio Environmental Board of Review overturned a portion of these regulations, thereby rendering same unenforceable. Since the plan for control of sulfur oxides could no longer be effectuated as designed by the State, the Administrator deemed it an ineffective submission and no further rulemaking action was taken. The Governor of Ohio formally withdrew the proposed regulations on July 16, 1975.

Where the Administrator determines that a State plan or portion thereof does not meet the requirements of the Clean Air Act, as amended, and 40 CFR Part 51, he is directed by section 110 (c) of the Act to propose and subsequently promulgate regulations setting forth a substitute implementation plan or portion thereof. Set forth below are proposed substitute sulfur dioxide



control regulations designed to attain and maintain ambient standards for SO<sub>2</sub> in Ohio thereby correcting the deficiency in the Ohio Implementation Plan noted above. The maintenance portion of the plan is based on projected growth over the next five years and the degree of control required of existing sources reflects the projected emission increase.

Because of the exceptional circumstances that surround this rulemaking, i.e., the vacation of the Administrator's original plan approval and the inability of the State to thereafter submit an approvable SO<sub>2</sub> strategy, the rulemaking contemplated herein effectively constitutes the first federally operative plan for controlling SO<sub>2</sub>, within the State. Consistent, therefore, with the Clean Air Act's injunction that primary ambient standards be attained within three years of plan approval (or such earlier time as may be practicable), the attainment date proposed herein is three years from the date of promulgation. Not all sources will require three years to attain compliance; in given cases "expeditious as practicable" compliance may require compliance far in advance of the attainment date.

The proposed regulations include categorical compliance schedules to be utilized by sources requiring the identified time period to attain compliance. Provision is made for alternate schedules to be submitted to the Administrator for approval in case a given source should desire to adjust the increments of progress within the proposed schedules. The Agency further reserves the right to specify shorter schedules for those sources which can comply more expeditiously than the three-year time frame.

Consistent with the recent Sixth Circuit decision (*Big Rivers Electric Corp. et al. and TVA v. EPA*, Nos. 74-2015, 74-2020, September 4, 1975), the proposed plan prohibits the operation of a source of pollutant emissions beyond three years from promulgation "without the application of one or more systems which control the 'kind and amounts' of its contaminant emissions." The Sixth Circuit Court of Appeals reasoned that, absent a showing that measures which qualify as emission limitations (see *Irwin v. NRDC*, 43 L. Ed. 2d 731, 745, 1975, defining emission limitations as "regulation of the composition of substances emitted into the ambient air") are unavailable, the Administrator cannot approve (or, therefore, promulgate) measures other than emission limitations. (Slip opinion, p. 11). Consistent with the Court's opinion, this proposed rulemaking contains only emission limitations since, in the Administrator's judgment, such limitations are not only capable of attaining national standards but are also achievable through application of available technology.

The control strategy proposed today to attain and maintain sulfur oxide ambient standards in Ohio was developed through a county by county analysis of air quality to determine the existence and severity of any sulfur dioxide problems. Where air quality problems were identified, county-specific control regulations were developed. Of the eighty-eight counties within the state, thirty-two counties were identified as possessing no existing or potential sulfur dioxide air quality problems due to existing sources inasmuch as existing sources do not adversely affect air quality standards. No control requirements are being proposed for sources located in these counties. However, it should be noted that, where applicable, sources in these counties will

still be subject to state new source review requirements and federal new source performance standards and nondegradation requirements. For the remaining counties, the proposed control strategy establishes specific industrial process limitations as well as a general industrial process requirement. Fuel combustion sources are required to meet specified emission limitations depending on rated capacity and location.

\* \* \* \*

#### FUEL COMBUSTION REGULATIONS

In developing the fuel combustion emission limitations, the Administrator examined the major fuel burning installations within each county in the state to assess the degree of control required, if any, to assure the attainment and maintenance of the sulfur dioxide ambient air quality standards.

Seven geographic areas were identified as possessing a significant population level, a significant overall sulfur dioxide emission level, or some combination of both, thus constituting "population-at-risk" areas. The seven areas identified were the metropolitan areas of Cleveland (Cuyahoga, Lake, and Lorain Counties); Toledo (Lucas County); Youngstown (Mahoning and Trumbull Counties); Steubenville (Jefferson County); Akron (Summit County); Dayton (Montgomery County); and Cincinnati (Hamilton and Butler Counties).

With the exception of the Tidd, Sammis and Painesville power plants (for which specific emission limitations are being proposed), sources in the Cleveland, Toledo, Akron, Youngstown and Steubenville areas will be required to comply with a sliding scale emission limitation of 1.2 to 6.0 pounds of

sulfur dioxide per million BTU of heat input per hour. In Dayton, it is 1.6 to 3.0 pounds of sulfur dioxide per million BRU of heat input per hour. The Cincinnati area has a "sliding scale" ranging from 1.2 to 2.4 pounds of sulfur dioxide per million BTU of heat input per hour. Under the sliding scale approach, larger sources will be required to institute controls that are proportionally greater than smaller sources. This is because of the greater impact, in terms of continuous concentrated emissions, of large sources vis a vis their smaller counterparts. It is also in recognition of the fact that larger sources, especially those that are part of multi-source consortiums, benefit from economies of scale and technological know-how, frequently not available to smaller sources.

For each of the remaining counties other than the 32 counties identified as not having air quality problems, the Administrator developed a flat emission rate designed to meet the national ambient air quality standard for a single source or group of sources identified within each county. The emission rates selected by the Administrator for inclusion in this proposed rulemaking vary from a flat rate of 0.6 pounds of sulfur dioxide per million BTU of actual heat input per hour up to no required control (i.e. greater than approximately 8.0 pounds of sulfur dioxide per million BTU of heat input per hour).

The compliance schedule regulations provide for use of low sulfur content coal and/or scrubber technology. Where low sulfur coal is unavailable, the Administrator believes that scrubber technology has been developed to the point that work on the installation of such technology can begin immediately. For the Administrator's views on the disposal of sludge

produced by non-regenerable scrubber systems, see discussion in the Notice published at 40 FR 42046 September 10, 1975).

### MALFUNCTIONS

The Administrator recognizes that some of the sources subject to the proposed regulations may have to install highly sophisticated control equipment which, due to the advanced degree of technology and unique operating conditions (even when properly operated and maintained), may from time to time unavoidably cease to operate as designed, especially during the initial period of startup.

In the event that such conditions cause the equipment to become temporarily unavailable, the Administrator believes that any resultant violations of applicable emission limits can be resolved through enforcement discretion. Nevertheless, the Administrator is interested in receiving comments on how this problem may be otherwise addressed. Specifically, the Administrator is interested in information from sources covered by the proposal regarding the kind of control equipment they plan to install, why such equipment may become unavoidably inoperative, the circumstances that would necessitate continued source operation during the period when the control equipment ceases to operate, and alternative methods of controlling emissions to comply with the emissions regulations during such periods. The Administrator is also interested in suggestions as to the method of documenting control equipment downtime, documenting that the downtime was unavoidable, and documenting the use of appropriate interim controls.

### 4. 40 C.F.R. §§ 52.1875, 1881 and 1882 (1977).

#### § 52.1875 Attainment dates for national standards.

(a) The following table presents the latest dates by which the national standards are to be attained. These dates reflect the information presented in Ohio's plan, except where noted.

Air quality control region	Pollutant						
	Particulate matter		Sulfur oxides g		Nitrogen dioxide	Carbon monoxide	Photochemical oxidants (hydrocarbons)
	Primary	Secondary	Primary	Secondary			
Greater Metropolitan Cleveland Intrastate	h	h	f	f	e	e	a
Huntington (West Virginia)-Ashland (Kentucky)-Portsmouth-Ironton (Ohio) Interstate	h	h	f	f	e	e	e
Mansfield-Marion Intrastate	h	h	f	f	e	e	e
Metropolitan Cincinnati Interstate	h	h	f	f	e	a	May 31, 1975
Metropolitan Columbus Intrastate	h	h	f	f	e	e	a
Metropolitan Dayton Intrastate	h	h	f	f	e	e	May 31, 1975
Metropolitan Toledo Interstate	h	h	f	f	e	e	May 31, 1975
Northwest Ohio Intrastate	h	h	f	f	e	e	e
Northwest Pennsylvania-Youngstown Interstate	h	h	f	f	e	e	e
Parkersburg (West Virginia)-Marietta (Ohio) Interstate	h	h	f	f	e	e	e
Sandusky Intrastate	h	h	f	f	e	e	e
Steubenville-Weirton-Wheeling Interstate	h	h	f	f	e	e	e
Wilmington-Chillicothe-Logan Intrastate	h	h	e	e	e	e	e
Zanesville-Cambridge Intrastate	h	h	f	f	e	e	e



NOTE: Dates or footnotes which are underlined are prescribed by the Administrator because the plan did not provide a specific date or the date provided was not acceptable.

- a. July 1975.
- b. 5 years from plan approval or promulgation.
- c. 18-month extension granted.
- d. Air quality levels presently below primary standards.
- e. Air quality levels presently below secondary standards.
- f. August 27, 1979, except for the following companies which are subject to an attainment date of June 17, 1980:

Ashland Oil, Inc.; Youngstown Sheet & Tube Co.; PPG Industries, Inc.; Wheeling-Pittsburgh Steel Corp.; Pittsburgh-Candfield Corporation; The Timken Company; The Sun Oil Co.; Sheller-Globe Corp.; The B. F. Goodrich Company; Phillips Petroleum Co.; Shell Oil Co.; Federal Paper Board Co., Inc.; The Firestone Tire & Rubber Co.; Republic Steel Corp.; Chase Bag Co.; White-Westinghouse Corp.; U.S. Steel Corp; Interlake, Inc.; Austin Powder Co.; Diamond Crystal Salt Co.; The Goodyear Tire & Rubber Co.; The Gulf Oil Co.; The Standard Oil Co.; Champion International Corp.; Coppers Co., Inc.; General Motors Corp; E.I. duPont de Nemours and Co.; Coulton Chemical Corp; Allied Chemical Corp, Specialty Chemicals Division; The Hoover Co.; Aluminum Co. of America; Ohio Greenhouse Assoc.; Armco Steel Corp.; Buckeye Power, Inc.; Cincinnati Gas and Electric; Cleveland Electric Illuminating Co.; Columbus and Southern Ohio Electric; Dayton Power and Light Co.; Columbus and Southern Ohio Electric; Dayton Power and Light Co.; Duquesne Light Co.; Ohio Edison Co.; Ohio Electric Co.; Ohio Power Co.; Pennsylvania Power Co.; Toledo Edison Co.

g. Notwithstanding the above, the following Ohio counties have already met the primary and secondary standards: Ashland, Brown, Carroll, Champaign, Clinton, Darke, Defiance, Fayette, Fulton, Geauga, Guernsey, Hardin, Harrison, Highland, Hocking, Holmes, Jackson, Knox, Logan, Madison, Monroe, Morrow, Noble, Perry, Portage, Preble, Putnam, Shelby, Union, Van Wert, Warren, Williams, Wyandot.

h. Ppr. 15, 1977.

(b) The requirements of 40 CFR Part 51 are not met by Revised AP-5-04, AP-7-03 and EP-32-03 (as it pertains to attainment dates for nitrogen oxides, carbon monoxide, hydrocarbon and photochemical oxidant standards in Ohio). [37 FR 10886, May 31, 1972, as amended at 37 FR 15088, July 27, 1972, 37 FR 19808, Sept. 22, 1972; 38 FR 7328, Mar. 20, 1973; 38 FR 12702, May 14, 1973; 38 FR 12921, May 17, 1973; 38 FR 30974, Nov. 8, 1973, 39 FR 16347, May 8, 1974; 41 FR 36327, Aug. 27, 1976; 41 FR 41692, Sept. 23, 1976; 42 FR 27589, May 31, 1977]

**§ 52.1881 Control strategy: Sulfur oxides (sulfur dioxide).**

(a) The requirements of § 51.13 of this chapter are not met because the Ohio plan does not provide for attainment and maintenance of the national standards for sulfur oxides (sulfur dioxide).

(b) Regulations for the control of sulfur dioxide in the State of Ohio.

(1) Definitions — All terms used in this paragraph but not specifically defined below shall have the meaning given them in the Clean Air Act or Parts 51, 52, or 60 of this Chapter.



(i) "By-product coke oven gas" means the gas produced during the production of metallurgical coke in slot-type, by-product coke batteries.

(ii) "Flue gas desulfurization" means any pollution control process which treats stationary source combustion flue gas to remove sulfur oxides.

(iii) "Fossil fuel" means natural gas, refinery fuel gas, coke oven gas, petroleum, coal and any form of solid, liquid, or gaseous fuel derived from such materials.

(iv) "Fossil fuel-fired steam generating unit" means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

(v) "Heat input" means the total gross calorific value (where gross calorific value is measured by ASTM Method D2015-66, D240-64, or D1826-64) of all fossil and non-fossil fuels burned. Where two or more fossil fuel-fired steam generating units are vented to the same stack the heat input shall be the aggregate of all units vented to the stack.

(vi) "Owner or operator" means any person who owns, leases, operates, controls, or supervises a facility, building, structure, or installation which directly or indirectly results or may result in emissions of any air pollutant for which a national standard is in effect

(vii) "Primary zinc smelter" means any installation engaged in the production, or any intermediate process in the production, of zinc or zinc oxide from the zinc sulfide ore concentrates through the use of pyrometallurgical techniques.

(viii) "Process" means any source operation including any equipment, devices, or contrivances and all appurtenances thereto, for changing any material whatever or for storage or handling of any materials, the use of which may cause the discharge of an air contaminant into the open air, but not including that equipment defined as fossil fuel fired steam generating units in these regulations. Duplicate or similar parallel operations within a structure, building, or shop shall be considered as a single process for purposes of this regulation.

(ix) "Process weight" means the total weight of all materials and solid fuels introduced into any specific process. Liquid and gaseous fuels and combustion air will not be considered as part of the process weight unless they become part of the product. For a cyclical or batch operation, the process weight per hour will be derived by dividing the total process weight by the number of hours from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle. For a continuous operation, the process weight per hour will be derived by dividing the process weight for the number of hours in a given period of time by the number of hours in that period. For fluid catalytic cracking units, process weight shall mean the total weight of material introduced as fresh feed to the cracking unit. For sulfuric acid production units, the nitrogen in the air feed shall not be included in the calculation of process weight.

(x) "Run" means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practices determined by the Administrator.

(xi) "Source operation" means the last operation preceding the emission of an air contaminant, which operation (a) results in the separation of the air contaminant from process materials or in the conversion of the process materials into air contaminants, as in the case of combustion of fuel; and (b) is not primarily an air pollution abatement operation.

(xii) "Stack" means any chimney, flue, vent, roof monitor, conduit or duct arranged to vent emissions to the ambient air.

(xiii) "Sulfur recovery plant" means any plant that recovers elemental sulfur from any gas stream.

(xiv) "Sulfuric acid production unit" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge.

(xv) "Total rated capacity" means the sum of the rated capacities of all fuel-burning equipment connected to a common stack. The rated capacity shall be the maximum guaranteed by the equipment manufacturer or the maximum normally achieved during use as determined by the Administrator, whichever is greater.

(2) Test Methods and Procedures — Unless specified below, the test methods and procedures used for determining compliance with the applicable subparagraphs of § 52.1881(b) shall be those prescribed in Part 60 of this chapter. Compliance tests shall be conducted under such conditions as the Administrator shall specify based on representative performance of the affected facility. Notification and recordkeeping procedures shall be those prescribed in § 60.7 of this chapter. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. A compliance test shall consist of at least three runs.

(i) The test methods and procedures used for determining compliance for any sulfur recovery plant subject to applicable subparagraph, of § 52.1881(b) shall be those prescribed in § 60.46 of this chapter with the exception that the maximum amount of sulfur dioxide sampled by Method 6 shall not exceed 50 percent of the stoichiometric amount of hydrogen peroxide absorbent.

(ii) The test methods and procedures used for determining compliance for any sulfuric acid production unit, or any primary zinc smelter subject to the applicable subparagraphs of § 52.1881(b) shall be those prescribed in § 60.85 of this chapter.

(iii) The test methods and procedures used to determine the compliance of any stack venting any fossil fuel-fired steam generating units subject to the applicable subparagraphs of § 52.1881(b) shall be those prescribed in

§ 60.46 of this chapter. The test methods for determining the sulfur content of fuels shall be those specified in § 60.45 of this chapter.

(3) Severability — If any provision of these regulations or the application thereof to any person or circumstances is held to be invalid, such invalidity shall not affect other provisions or application of any other part of these regulations which can be given effect without the invalid provisions or application, and to this end the provisions of these regulations and the various applications thereof are declared to be severable.

(4) Submission of Information — The submission of any information required under § 52.1882 shall be made to the Director, Enforcement Division, U.S. Environmental Protection Agency, Region V, 230 South Dearborn, Chicago, Illinois, 60604, Attention Air Compliance Section.

(5) For purposes of this regulation, stack and boiler identification numbers used in this paragraph were derived from correspondence submitted to the U.S. EPA by the affected owners or operators, and may be found in the record supporting this rulemaking.

(6) This paragraph contains no applicable provisions in the following counties of Ohio: Ashland, Brown, Carroll, Champaign, Clinton, Darke, Defiance, Fayette, Fulton, Geauga, Guernsey, Hardin, Harrison, Highland, Hocking, Holmes, Jackson, Knox, Logan, Madison, Monroe, Morrow, Noble, Perry, Portage, Preble, Putnam,

Shelby, Union, Van Wert, Warren, Williams and Wyandot, nor does it apply to facilities equal to or less than 10 million BTU per hour total aggregate rated capacity of all units at a facility.

(7)-(10) Reserved.

(11) In Adams County:

(i) The Dayton Power and Light Company or any subsequent owner or operator of the Stuart Power Plant in Adams County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Stuart Plant in excess of 3.16 pounds of sulfur dioxide per million BTU actual heat input.

(ii) In lieu of meeting subparagraph (11)(i), the Dayton Power and Light Company may elect, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy the following equation:

$$(A) 0.0791 (EL_1 + EL_2 + EL_3 + EL_4) \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation, each stack is identified as follows:

Stack No.:	Boiler identification
1 .....	1
2 .....	2
3 .....	3
4 .....	4

## (12) In Allen County:

(i) The Ford Motor Company or any subsequent owner or operator of the Ford Motor Company facilities at Allen County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 3.40 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The present or any subsequent owner or operator of the Lima State Hospital at Allen County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 5.39 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The Vistron Corporation or any subsequent owner or operator of the Vistron Corporation facilities at Allen County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 1.27 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The Standard Oil Company or any subsequent owner or operator of the Standard Oil Company facilities at Allen County, Ohio shall not cause or permit the emission of sulfur dioxide in excess of the rates specified below:

(v) The Ohio Power Company or any subsequent owner or operator of the Woodcock Power Plant in Allen County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack of the Woodcock Power Plant in excess of 4.38 pounds of sulfur dioxide per million BTU actual heat input.

(A) 100 pounds of sulfur dioxide per 1000 pounds of sulfur processed at the Claus unit.

(B) 0.30 pounds of sulfur dioxide per 1000 pounds of petroleum products at the Fluid Catalytic Cracker/Carbon Monoxide Boiler.

(C) 11.00 pounds of sulfur dioxide per ton of production at the Trolumen unit.

(D) 0.71 pounds of sulfur dioxide per million BUT actual heat input at the Iso Stabilizer and Split Heaters — B002.

(E) 0.21 pounds of sulfur dioxide per million BTU actual heat input at the Vac I Heater — B012.

(F) 0.13 pounds of sulfur dioxide per million BTU actual heat input from all remaining process heaters and fossil fuel-fired steam generators.

## (13) In Ashtabula County:

(i) The Cleveland Electric Illumination Company or any subsequent owner or operator of the Ashtabula Power Plant in Ashtabula County, Ohio shall not cause or permit the emission of sulfur dioxide from any of the stacks 1, 2, and 3 at the Ashtabula Plant in excess of 2.40 pounds of sulfur dioxide per million BTU actual heat input. Emissions of sulfur dioxide from stack 4 at the Ashtabula Plant shall not exceed 9.10 pounds of sulfur dioxide per million BTU actual heat input. Emissions of sulfur dioxide from stack 5 at the Ashtabula plant shall not exceed 8.20 pounds of sulfur dioxide per million BTU actual heat input.



(ii) The RMI Corporation, or any subsequent owner or operator of the RMI Corporation metal reduction plant in Ashtabula County, Ohio shall not cause or permit emissions of sulfur dioxide in excess of 4.80 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The RMI Corporation, or any subsequent owner or operator of the RMI Corporation sodium plant at Ashtabula County, Ohio shall not cause or permit the emissions of sulfur dioxide in excess of 2.70 pounds of sulfur dioxide per million BTU actual heat input.

(vi) The General Tire and Rubber Company, or any subsequent owner or operator of the General Tire and Rubber Company Plant at Ashtabula County, Ohio shall not cause or permit the emissions of sulfur dioxide in excess of 1.30 pounds of sulfur dioxide per million BTU actual heat input.

(v) The New Jersey Zinc Company or any subsequent owner or operator of New Jersey Zinc Company Plant at Ashtabula County, Ohio shall not cause or permit the emission of sulfur dioxide in excess of 1.50 pounds of sulfur dioxide per million BTU actual heat input at any oil burning unit.

(14) In Athens County:

(i) No owner or operator of any fossil fuel-fired steam generating unit, unless otherwise specified below, shall cause or permit the emission of sulfur dioxide from any

stack in excess of 7.50 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The Columbus and Southern Ohio Power Company or any subsequent owner or operator of the Poston Power Plant in Athens County, Ohio shall not cause or permit the emission of sulfur dioxide from stacks 1 and 2 at the Poston Plant in excess of 3.72 pounds of sulfur dioxide per million BTU actual heat input. Stack number 3 is subject to New Source Performance Standards and is limited to 1.2 pounds of sulfur dioxide per million BTU of actual heat input.

(iii) In lieu of meeting subparagraph (14)(ii), the Columbus and Southern Ohio Power Company may elect in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

$$(A) 0.1932 EL_1 + 0.0757 EL_2 \leq 1$$

$$(B) 0.1369 EL_1 + 0.1276 EL_2 \leq 1$$

$$(C) 0.1230 EL_1 + 0.1406 EL_2 \leq 1$$

where  $EL_1$  is the emission limitation (in pounds of sulfur dioxide per million BTU of actual heat input) per stack  $i$ , and  $i$  is the stack number. For purposes of this regulation, each stack is identified as follows:

Stack No.:	Boiler identification
1 .....	1, 2
2 .....	3, 4
3 .....	5, 6

(15) In Auglaize County, the Goodyear Tire and Rubber Company, or any subsequent owner or operator of the Goodyear Tire and Rubber Company facilities in Auglaize County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 4.20 pounds of sulfur dioxide per million BTU actual heat input.

(16) In Belmont County:

(i) The Wheeling Pittsburgh Steel Company or any subsequent owner or operator of the Martins Ferry Steel Plant in Belmont County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Martins Ferry facility in excess of 2.60 pounds of sulfur dioxide per million BTU actual heat input.

(17) In Butler County:

(i) No present or subsequent owner or operator, unless otherwise specified in this subparagraph, of any fossil fuel-fired steam generating unit(s) located in Butler County, Ohio shall cause or permit sulfur dioxide emissions from any stack in excess of 1.40 pounds of sulfur dioxide per million BTU actual heat input.

(ii) No present or any subsequent owner or operator, unless otherwise specified in this subparagraph, of a by-product coke over located in Butler County, Ohio, shall cause or permit the combustion of by-product coke over gas containing a total sulfur content expressed as hydrogen sulfide in excess of 100 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack at this facility in excess of 0.50 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The Armco Steel Company or any subsequent owner or operator of the Armco Steel-Hamilton Plant located in Butler County, Ohio shall cause or permit the combustion of by-product coke over gas containing a total sulfur content expressed as hydrogen sulfide in excess of 146 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack at this facility in excess of 0.73 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The Armco Steel Company or any subsequent owner or operator of the Armco Steel Middletown Plant located in Butler County, Ohio shall not cause or permit emissions of sulfur dioxide from fossil fuel-fired steam generating units number B001, B002, B003, and B004 in excess of 2.11 pounds of sulfur dioxide per million BTU actual heat input and from fossil fuel-fired steam generating units numbered B007, B008, B009, and B010 in excess of 1.79 Pounds of sulfur dioxide per million BTU actual heat input.

(v) The Champion Paper Company or any subsequent owner or operator of the Champion Paper facilities located in Butler County, Ohio shall not cause or permit emissions of sulfur dioxide from fossil fuel-fired steam-generating units numbered B010 and B020 in excess of 3.43 pounds of sulfur dioxide per million BTU actual heat input.

## (18) In Clark County:

(i) The Ohio Edison Company or any subsequent owner or operator of the Mad River Power Plant in Clark County, Ohio, shall not cause or permit the emission of sulfur dioxide from any of the stacks 1, 2, and 3 at the Mad River Plant in excess of 4.62 pounds of sulfur dioxide per million BTU actual heat input. Emissions of sulfur dioxide from stacks 4 and 5 at the Mad River Plant shall not be in excess of 1.00 pounds of sulfur dioxide per million BTU actual heat input.

(ii) In lieu of meeting subparagraph (18)(1), the Ohio Edison Company may elect for stacks 1, 2, and 3 only, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

$$(A) 0.0995 (EL_1 + EL_2) + 0.0173 EL_3 \leq 1$$

$$(B) 0.0498 (EL_1 + EL_2) + 0.0516 EL_3 \leq 1$$

$$(C) 0.0735 (EL_1 + EL_2) + 0.0190 EL_3 \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as:

Stack No.:	Boiler identification
1 .....	1
2 .....	2
3 .....	3
4 .....	A (Turbine)
5 .....	B (Turbine)

## (19) In Clermont County:

(i) The Cincinnati Gas & Electric Company or any subsequent owner or operator of the Beckjord Power Plant in Clermont County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack at the Beckjord plant in excess of 2.02 pounds of sulfur dioxide per million BTU actual heat input.

(ii) In lieu of subparagraph (19)(i) the Cincinnati Gas and Electric Company may elect, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

$$(A) 0.1426 EL_1 + 0.1629 EL_2 + 0.0667 EL_3 + 0.0823 EL_4 + 0.0122 EL_5 \leq 1$$

$$(B) 0.1252 EL_1 + 0.1349 EL_2 + 0.1003 EL_3 + 0.1192 EL_4 + 0.0155 EL_5 \leq 1$$

$$(C) 0.0337 EL_1 + 0.0353 EL_2 + 0.0382 EL_3 + 0.0451 EL_4 + 0.0709 EL_5 \leq 1$$

$$(D) 0.1334 EL_1 + 0.1492 EL_2 + 0.0740 EL_3 + 0.0904 EL_4 + 0.0247 EL_5 \leq 1$$

$$(E) 0.0249 EL_1 + 0.0257 EL_2 + 0.0283 EL_3 + 0.0332 EL_4 + 0.0841 EL_5 \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1
2 .....	2

<i>Stack No.:</i>	<i>Boiler Identification</i>
3 .....	3
4 .....	4
5 .....	5, 6

(20) In Columbiana County, no present or any subsequent owner or operator of any fossil fuel-fired steam generating unit(s) operating in Columbiana County, Ohio shall cause or permit emission of sulfur dioxide from any stack in excess of 4.40 pounds of sulfur dioxide per million BTU actual heat input.

(21) In Coshocton County: (i) The Columbus and Southern Ohio Power Company or any subsequent owner or operator of the Conesville Plant in Coshocton County, Ohio shall not cause or permit the emission of sulfur dioxide from any of the stacks 1, 2, and 3 at the Conesville Plant in excess of 5.66 pounds of sulfur dioxide per million BTU actual heat input. Stack 4 at the Conesville Plant is subject to New Source Performance Standards and is limited to 1.2 pounds of sulfur dioxide per million BTU actual heat input.

(ii) In lieu of meeting subparagraph (21)(i), the Columbus and Southern Ohio Power Company may elect for stacks 1, 2, and 3 only, in accordance with the compliance schedule provision of § 52.182, to comply with the emission limitations which will satisfy all of the following equations:

- (A)  $0.0677 EL_1 + 0.0411 EL_2 + 0.0065 EL_3 \leq 1$   
 (B)  $0.0707 EL_1 + 0.0730 EL_2 + 0.0011 EL_3 \leq 1$   
 (C)  $0.0623 EL_1 + 0.0767 EL_2 + 0.0013 EL_3 \leq 1$   
 (D)  $0.0565 EL_1 + 0.0337 EL_2 + 0.0866 EL_3 \leq 1$   
 (E)  $0.0401 EL_1 + 0.0683 EL_2 + 0.0026 EL_3 \leq 1$   
 (F)  $0.0410 EL_1 + 0.1021 EL_2 + 0.0 EL_3 \leq 1$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$ , and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

<i>Stack No.:</i>	<i>Boiler Identification</i>
1 .....	1, 2
2 .....	3
3 .....	4
4 .....	5, 6

(22) In Crawford County, no present or any subsequent owner or operator of any fossil fuel-fired steam generating unit(s) operating in Crawford County, Ohio, shall cause or permit emissions of sulfur dioxide from any stack in excess of 9.60 pounds of sulfur dioxide per million BTU actual heat input.

(23) In Cuyahoga County, no owner or operator, unless otherwise specified in this subparagraph, shall cause or permit emission of sulfur dioxide from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units between 10.0 and  $350 \times 10^4$  BTU's per hour total rated capacity of heat input, the emission rate in pounds of sulfur dioxide per million BTU actual heat input shall be calculated by the following equation:

$$EL = 7.014 Q_m^{0.3014}$$



where  $Q_m$  is the total rated capacity of heat input in million BTU per hour and EL is the allowable emission rate in pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired units equal to or greater than 350 million BTU per hour total rated capacity, 1.20 pounds of sulfur dioxide per million BTU of actual heat input.

(iii) (A) The Republic Steel Corporation or any subsequent owner or operator of Republic Steel facilities located in Cuyahoga County, Ohio shall not cause or permit the combustion of by-product coke oven gas at the basic oxygen furnace shop, open hearth shop, blast furnaces 1, 4 and 5, foundry, P-Anneals 1-4, and car thaw 1-1 through 1-4, containing a total sulfur content expressed as hydrogen sulfide in excess of 240 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack at the above facilities in excess of 1.20 pounds of sulfur dioxide per million BTU actual heat input.

(B) The Republic Steel Corporation or any subsequent owner or operator of Republic Steel facilities located in Cuyahoga County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack attached to the Open Hearth precipitator units 111 and 112, 98-inch slab furnace units 1, 2, 3, 4, and 5, and the sinter plant at this facility in excess of 0.00 pounds of sulfur dioxide per million BTU actual heat input.

(C) The Republic Steel Corporation or any subsequent owner or operator of Republic Steel facilities located in Cuyahoga County, Ohio, shall not cause or permit the combustion of by-product coke oven gas at the 84-inch slab furnace units 1, 2 and 3 containing a total sulfur content expressed as hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack at the above facilities in excess of 1.24 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The Cleveland Electric Illuminating Company or any subsequent owner or operator of the Lake Shore Power Plant located in Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Lake Shore Plant in excess of the following rates:

(A) 1.30 pounds of sulfur dioxide per million BTU of actual heat input from unit no. 18.

(B) 1.90 pounds of sulfur dioxide per million BTU of actual heat input for units 91 through 94.

(v) The City of Cleveland or any subsequent owner or operator of the Division Pumping Station located at Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Division Pumping Station in excess of 4.20 pounds of sulfur dioxide per million BTU of actual heat input.

(vi) No present or subsequent owner or operator of the fossil fuel-fired steam generating units listed herein shall cause or permit the emission of sulfur dioxide from any stack attached to the identified boilers in excess of 1.00 pounds of sulfur dioxide per million BTU of actual heat input:

<i>Company</i>	<i>Boiler Identification</i>
(A) Cleveland Electric Illuminating Co., Hamilton Ave. Steam Plant	All boilers.
(B) Republic Steel	234, 1, 2, A, B, and C.
(C) Addressograph	1, 2, and 3.
(D) General Electric Co.	1 and 2
(E) Jones and Laughlin Steel	30.

(vii) No present or subsequent owner or operator of the fossil fuel-fired steam generating units listed herein shall cause or permit the emission of sulfur dioxide from any stack attached to the identified boilers in excess of 0.50 pounds of sulfur dioxide per million BTU of actual heat input:

<i>Company</i>	<i>Boiler Identification</i>
(A) Jones & Laughlin Steel	22, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, and 35.
(B) U.S. Steel, Cuyahoga- Lorain works	1, 2, 3, 4, 5 and 6.
(C) DuPont	18.
(D) Harshaw Chemical	7 and 8.
(E) Standard Oil of Ohio	7, 9 and 10.

(vii) The United States Steel Corporation, Cuyahoga Works or any subsequent owner or operator of the Cuyahoga Works in Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack attached to boilers 3 through 7 at the Cuyahoga Works in excess of 1.30 pounds of sulfur dioxide per million BTU of actual heat input.

(ix) The Hupp Company or any subsequent owner or operator of Hupp facilities in Cuyahoga County, Ohio shall not cause or permit emission of sulfur dioxide from any stack attached to boilers 1 through 3 at this facility in excess of 3.50 pounds of sulfur dioxide per million BTU of actual heat input.

(x) The Chase Bag Company or any subsequent owner or operator of Chase Bag facilities in Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack attached to boilers 1 and 2 at this facility in excess of 4.20 pounds of sulfur dioxide per million BTU of actual heat input.

(xi) The General Electric Company or any subsequent owner or operator of General Electric facilities in Cuyahoga County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack attached to boilers 3 and 4 at this facility in excess of 3.10 pounds of sulfur dioxide per million BTU of actual heat input.

(xii) The General Motors Corporation or any subsequent owner or operator of the Fisher

Body plant at Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack attached to boilers 7, 8, and 9 at this facility in excess of 2.10 pounds of sulfur dioxide per million BTU of actual heat input.

(xiii) No present or subsequent owner or operator of the Medical Center located in Cuyahoga County, Ohio shall cause or permit the emission of sulfur dioxide from any stack attached to boilers 3 through 8 at the Medical Center in excess of 4.60 pounds of sulfur dioxide per million BTU of actual heat input.

(xiv) The Ford Motor Company or any subsequent owner or operator of the Ford Motor Company facilities located at Cuyahoga County, Ohio shall not cause or permit emissions of sulfur dioxide from any stack at these facilities in excess of the rates specified below:

(A) 1.20 pounds of sulfur dioxide per million BTU actual heat input for boilers 1, 2, and 3 at the Stamping Plant.

(B) 4.20 pounds of sulfur dioxide per million BTU actual heat input for boilers 1, 2, 3, 4, and 5 at the Engine Plant #2.

(xv) No present or subsequent owner or operator of the Highland View Hospital shall cause or permit the emission of sulfur dioxide from any stack at the Highland View Hospital in excess of the rates specified below:

(A) 2.90 pounds of sulfur dioxide per million BTU of heat input for boilers 3 and 4.

(B) 1.50 pounds of sulfur dioxide per million BTU of heat input for boilers 1 and 2.

(xvi) The Allied Chemical Company or any subsequent owner or operator of the Allied Chemical Company sulfuric acid production units at Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide from any unit in excess of 4.8 pounds of sulfur dioxide per ton of 100% sulfuric acid produced.

(xvii) No owner or operator, unless otherwise specified in this subparagraph, shall cause or permit the combustion of by-product coke oven gas from any stack containing a total sulfur content expressed as hydrogen sulfide in excess of 170 grains of hydrogen sulfide per 100 dry standard cubic neet of coke oven gas or the emission of sulfur dioxide from any stack in excess of 0.86 pounds of sulfur dioxide per million BTU actual heat input. Facilities subject to paragraph (b) (23) (i) and (ii) of this paragraph are not subject to this limitation.

(xviii) No owner or operator of any process equipment, unless otherwise specified in this subparagraph, shall cause or permit the emission of sulfur dioxide from any stack in excess of 6.00 pounds of sulfur dioxide per tone of actual process weight input.

(xix) The Harshaw Chemical Company or any subsequent owner or operator of the Harshaw Chemical Company facilities in Cuyahoga County, Ohio, shall not cause or

permit the emission of sulfur dioxide from any stack in excess of 19.0 pounds of sulfur dioxide per ton of actual process weight input.

(xx) The Dupont Company or any subsequent owner or operator of the Dupont Company sulfuric acid production units at Cuyahoga County, Ohio shall not cause or permit the emission of sulfur dioxide in excess of 10.0 pounds of sulfur dioxide per ton of 100% sulfuric acid production.

(24) In Delaware County, no present or subsequent owner or operator of any fossil fuel-fired steam generating unit(s) operating in Delaware County, Ohio, shall cause or permit emission of sulfur dioxide from any stack in excess of 4.00 pounds of sulfur dioxide per million BTU actual heat input.

(25) In Erie County:

(i) No present or any subsequent owner or operator of any fossil fuel-fired steam generating unit(s) shall cause or permit emission of sulfur dioxide from any stack in excess of 1.60 pounds of sulfur dioxide from any stack in excess of 1.60 pounds of sulfur dioxide per million BTU actual heat input.

(ii) No present or any subsequent owner or operator of any process equipment, shall cause or permit the emission from any stack into the atmosphere of any process gas stream containing sulfur dioxide in excess of 9.50 pounds of sulfur dioxide per ton of actual process weight input.

(26) In Fairfield County:

(i) The Diamond Power Speciality Company or any subsequent owner or operator of the Diamond Power facility in Fairfield County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Diamond Power facility in excess of 6.90 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The Crown-Zellerbach Corporation or any subsequent owner or operator of the Crown-Zellerbach facility in Fairfield County, Ohio shall not cause or permit the emission of sulfur dioxide from the stack attached to #2 boiler at the Crown-Zellerbach facility in excess of 7.00 pounds of sulfur dioxide per million BTU actual heat input.

(27) In Franklin County, no owner or operator of the following types of facilities unless otherwise specified in this subparagraph, shall cause or permit emission of sulfur dioxide from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating unit between 10.0 and  $50.0 \times 10^6$  BTU per hour total rated capacity of heat input, the emission rate in pounds of sulfur dioxide per million BTU actual heat input shall be calculated by the following equation:

$$EL = 8.088Q_m^{0.4307}$$

where  $Q_m$  is the total rated capacity of heat input in million BTU per hour and EL is the allowable emission rate in pounds of sulfur dioxide per million BTU actual heat input.



(ii) For fossil fuel-fired steam generating unit(s) equal to or greater than  $50.0 \times 10^6$  BTU per hour total rated capacity of heat input, the emission limitation shall be 1.50 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The present or any subsequent owner or operator of the Columbus State Institution in Franklin County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 3.80 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The present or any subsequent owner or operator of the Columbus State Hospital in Franklin County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 4.10 pounds of sulfur dioxide per million BTU actual heat input.

(v) The present or any subsequent owner or operator of Ross Laboratory in Franklin County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 4.80 pounds of sulfur dioxide per million BTU actual heat input.

(vi) The present or any subsequent owner or operator of the Rickenbacker Air Force Base in Franklin County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 2.20 pounds of sulfur dioxide per million BTU actual heat input.

(vii) The present or any subsequent owner or operator of the Capital City Products facility in Franklin County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 3.10 pounds of sulfur dioxide per million BTU actual heat input.

(viii) The present or any subsequent owner or operator of the Westinghouse Electric facility in Franklin County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 2.20 pounds of sulfur dioxide per million BTU actual heat input.

(ix) The present or any subsequent owner or operator of the Naval Weapons Industrial Reserve facility in Franklin County shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 1.06 pounds of sulfur dioxide per million BTU actual heat input.

(x) No owner or operator of any primary zinc smelter shall cause or permit the emission of sulfur dioxide from the plant in excess of the amount prescribed by the following equation:

$$Y = 0.564X^{0.85}$$

where X is the total sulfur feed expressed as elemental sulfur in the smelter input stream in lbs/hour and Y is the allowable sulfur dioxide emission rate in lbs/hour from all stacks combined.

(xi) Except as provided in subparagraph (27) (x) of this paragraph, no owner or operator of any process equipment shall cause or permit the emission from any stack into the atmosphere of any process gas stream containing sulfur dioxide in excess of 2.40 pounds of sulfur dioxide per ton of actual process weight input.

(28) In Gallia County:

(i) The Ohio Power Company or any subsequent owner or operator of the Gavin Power Plant in Gallia County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Gavin facility in excess of 9.50 pounds per million BTU actual heat input.

(ii) The Ohio Valley Electric Company or any subsequent owner or operator of the Kyger Creek Power Plant in Gallia County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Kyger Creek facility in excess of 8.20 pounds of sulfur dioxide per million BTU actual heat input.

(29) In Greene County:

No owner or operator of any process equipment shall cause or permit the emission of sulfur dioxide from any stack in excess of that permitted by the following equation:

$$EL = 563.3P^{0.9027}$$

where EL is the allowable emission rate in pounds of sulfur dioxide per ton of actual process weight input and P is the design process weight input rate in tons per hour.

(ii) The present or any subsequent owner of the Wright-Patterson Air Force Base in Greene County, Ohio, shall not cause or permit emissions of sulfur dioxide in excess of 0.38 pounds of sulfur dioxide per million BTU actual heat input from all stacks at building 271; emissions of sulfur dioxide in excess of 0.81 pounds of sulfur dioxide per million BTU actual heat input from all stacks at building 770; emissions of sulfur dioxide in excess of 0.33 pounds of sulfur dioxide per million BTU actual heat input from all stacks at building 66; emissions of sulfur dioxide in excess of 0.79 pounds of sulfur dioxide per million BTU actual heat input from all stacks at building 1240; emissions of sulfur dioxide in excess of 0.93 pounds of sulfur dioxide per million BTU actual heat input from all stacks at building 170.

(iii) No present or any subsequent owner of the Antioch College at Greene County, Ohio shall cause or permit the emissions of sulfur dioxide from any stack at Antioch College in excess of the rates specified below:

(A) 6.20 pounds of sulfur dioxide per million BTU actual heat input for any fossil fuel-fired steam generating unit burning coal.

(B) 1.40 pounds of sulfur dioxide per million BTU actual heat input for any fossil fuel-fired steam generating unit burning oil.

(iv) No present or any subsequent owner of Central State University at Greene County, Ohio shall cause or permit emissions of sulfur dioxide from any stack at Central State

University in excess of the rates specified below:

(A) 4.30 pounds of sulfur dioxide per million BTU actual heat input from Stack 2.

(30) In Hamilton County:

(i) No owner or operator of any fossil fuel-fired steam generating unit(s) located in Hamilton County, Ohio, unless otherwise specified in this subparagraph, shall cause or permit sulfur dioxide emissions from any stack in excess of 2.00 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The Cincinnati Gas and Electric Company or any subsequent owner or operator of the Miami Fort Power Plant in Hamilton County, Ohio shall not cause or permit the emissions of sulfur dioxide, from stack number 2 at the Miami Fort Plant in excess of 0.30 pounds of sulfur dioxide per million BTU actual heat input, from stacks 3 and 4 at the Miami Fort Plant in excess of 3.30 pounds of sulfur dioxide per million BTU actual heat input, from stack 5 at the Miami Fort Plant in excess of 5.50 pounds of sulfur dioxide per million BTU actual heat input. Stack number 6 is subject to Federal New Source Performance Standards and is limited to 1.20 pounds of sulfur dioxide per million BTU of actual heat input. Stacks at the Miami Fort Power Plant are identified as follows:

Stack No.	Boiler No.
2 .....	3
3 .....	4 & 5
4 .....	6
5 .....	7
6 .....	8

(iii) No owner or operator of a sulfur acid production unit(s) shall cause or permit the emissions of sulfur dioxide from the unit(s) in excess of 21.0 pounds of sulfur dioxide per ton of 100% sulfuric acid produced.

(iv) No owner or operator of any fluidized catalytic cracking unit located in Hamilton County, Ohio shall cause or permit sulfur dioxide emissions from any unit in excess of 0.78 pounds of sulfur dioxide per thousand pounds of charging feed stock.

(31) In Hancock County:

(i) No owner or operator of any fossil fuel-fired steam generating unit(s) or process operation heater(s) located in Hancock County, Ohio, unless otherwise specified in the subparagraph, shall cause or permit sulfur dioxide emissions from any stack in excess of 5.20 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The Northern Ohio Sugar Company, or any subsequent owner or operator of the Northern Ohio Sugar Company facilities in Hancock County, Ohio shall not cause or permit sulfur dioxide emissions from any stack in excess of 2.50 pounds of sulfur dioxide per million BTU actual heat input.

(32) In Henry County:

(i) No owner or operator of any oil-fired fossil fuel steam generating unit, unless otherwise specified shall cause or permit emission of sulfur dioxide from any stack in excess of 2.10 pounds per million BTU actual heat input.

(ii) The present or subsequent owner or operator of the City of Napoleon Power Plant in Henry County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Napoleon Power Plant in excess of 0.0 pounds of sulfur dioxide per million BTU actual heat input.

(33) In Huron County, no owner or operator of any fossil fuel-fired steam generating unit shall cause or permit emission of sulfur dioxide from any stack in excess of 8.00 pounds of sulfur dioxide per million BTU actual heat input.

(34) In Jefferson County, no owner or operator, unless otherwise specified in this subparagraph, shall cause or permit sulfur dioxide emissions from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating unit(s) burning coal: 1.80 pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired steam generating unit(s) burning oil: 0.80 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The Kaul Clay Company or any subsequent owner or operator of the Kaul Clay Plant facilities in Jefferson County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack of this facility in excess of 2.82 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The Toronto Paper Board Company or any subsequent owner or operator of the Toronto Paper Board Company plant facilities in Jefferson County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 5.96 pounds of sulfur dioxide per million BTU actual heat input.

(v) The Ohio Edison Company or any subsequent owner or operator of the Toronto Power Plant in Jefferson County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Toronto Plant in excess of 8.10 pounds of sulfur dioxide per million BTU actual heat input.

(vi) The Ohio Edison Power Company or any subsequent owner or operator of the Sammis Power Plant in Jefferson County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Sammis Plant in excess of 2.91 pounds of sulfur dioxide per million BTU actual heat input.

(vii) In lieu of meeting subparagraph (34) (vi), the Ohio Edison Company may elect, in accordance with the compliance schedule provision of § 52.1882, to comply with the emission limitations which simultaneously satisfy all of the following equations:

$$\begin{aligned} \text{(A)} \quad & 0.1673 \text{ EL}_1 + 0.1670 \text{ EL}_2 + 0.0072 \text{ EL}_3 + 0.0022 \text{ EL}_4 \leq 1 \\ \text{(B)} \quad & 0.0557 (\text{EL}_1 + \text{EL}_2) + 0.1106 \text{ EL}_3 + 0.0734 \text{ EL}_4 \leq 1 \end{aligned}$$



where  $EL_4$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1, 2
2 .....	3, 4
3 .....	5, 6
4 .....	7

(vii) The owner or operator of the Cardinal Power Plant in Jefferson County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Cardinal Plant in excess of 4.76 pounds of sulfur dioxide per million BTU actual heat input.

(xi) In lieu of meeting subparagraph (24) (vii), the owner or operator of the Cardinal Power Plant may elect, in accordance with the compliance schedule provision of § 52.1882, to comply with the emission limitations which satisfy the following equation.

$$(A) 0.0668 (EL_1 + EL_2) + 0.0763 EL_3 \leq 1$$

where  $EL_1$  is the emission limitations (pounds per million BTU) per stack  $i$  and  $i$  as the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1
2 .....	2
3 .....	3

(x) The Ohio Power Company or any subsequent owner or operator of the Tidd Power Plant in Jefferson County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack at the Tidd Plant in excess of 1.58 pounds of sulfur dioxide per million BTU actual heat input.

(xi) In lieu of meeting subparagraph (24) (viii), the Ohio Power Company may elect, in accordance with the compliance schedule provision of § 52.1882, to comply with the emission limitations which will simultaneously satisfy all of the following equations:

$$(A) .1521 (EL_1 + EL_2) + .3267 EL_3 \leq 1$$

$$(B) .1443 (EL_1 + EL_2) + .3338 EL_3 \leq 1$$

$$(C) .1568 (EL_1 + EL_2) + .3169 EL_3 \leq 1$$

$$(D) .1591 (EL_1 + EL_2) + .3143 EL_3 \leq 1$$

where  $EL_1$  is the emission limitations (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	11
2 .....	12
3 .....	21

(xii) No owner or operator of a by-product coke oven shall cause or permit the combustion of by-product coke oven gas containing a total sulfur content expressed as hydrogen sulfide in excess of 50 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas.

(xiii) The Wheeling Pittsburg Steel Company or any subsequent owner or operator of the Yorkville Steel Plant facility in Jefferson County, Ohio shall not cause or permit the emission of sulfur dioxide from any fossil fuel-fired steam generating unit stack at the Yorkville facility in excess of 4.20 pounds of sulfur dioxide per million BTU actual heat input.

(35) In Lake County, no owner or operator of the following types of facilities, unless otherwise specified in this subparagraph, shall cause or permit emissions from stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units between 10.0 and  $1000 \times 10^6$  BTU per hour total rated capacity of heat input, the emission rate in pounds of sulfur dioxide per million BTU actual heat input shall be calculated by the following equation:

$$EL = 14.976Qm^{0.9431}$$

where  $Qm$  is the total rated capacity of heat input in million BTU per hour and  $EL$  is the allowable emission rate in pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired steam generating unit(s) equal to or greater than  $1000 \times 10^6$  BTU per hour total rated capacity of heat input, 1.40 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The present or any subsequent owner or operator of the Ohio Rubber Company

facility in Lake County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the facility in excess of 6.00 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The present or any subsequent owner or operator of the Painesville Municipal Power Plant in Lake County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of the rates specified below:

(A) For boilers 1 through 4: 5.20 pounds of sulfur dioxide per million BTU actual heat input.

(B) Boiler number 5 is subject to New Source Performance Standards and is limited to 1.20 pounds of sulfur dioxide per million BTU actual heat input.

(V) The present or any subsequent owner or operator of the Diamond Shamrock facility in Lake County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 0.00 pounds of sulfur dioxide per million BTU actual heat input or 0.00 pounds of sulfur dioxide from any process.

(vi) The Cleveland Electric Illuminating Co. or any subsequent owner or operator of the East Lake Plant in Lake County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the East Lake Plant in excess of 1.43 pounds of sulfur dioxide per million BTU actual heat input.

(vii) In lieu of meeting subparagraph (25) (vi), the Cleveland Electric Illuminating Company may elect, in accordance with the compliance schedule provision of § 52.1882, to comply with the emission limitations which satisfy all of the following equations:

$$\begin{aligned} \text{(A) } 0.143 (EL_1 + EL_2) &+ 0.192 EL_4 + 0.078 EL_5 \leq 1.0 \\ \text{(B) } 0.174 (EL_1 + EL_2 + EL_3) &+ 0.108 EL_4 + 0.078 EL_5 \leq 1.0 \\ \text{(C) } 0.113 (EL_1 + EL_2 + EL_3) &+ 0.187 EL_4 + 0.025 EL_5 \leq 1.0 \end{aligned}$$

where  $EL_1$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.	Boiler Identification
1 .....	1
2 .....	2
3 .....	3
4 .....	4
5 .....	5

(viii) (A) The Lubrizol Corporation, or any subsequent owner or operator of the Lubrizol facilities located in Lake County, Ohio, Shall not cause or permit the emission of sulfur dioxide from any stack at the Lubrizol facility in excess of 20.00 pounds of sulfur dioxide per ton of actual process weight input.

(B) The Lubrizol Corporation, or any subsequent owner or operator of the Lubrizol facilities located in Lake County, Ohio, shall

not cause or permit the emission of sulfur dioxide from any stack for boilers 1, 2 or 3 at the Lubrizol facility in excess of 0.55 pounds of sulfur dioxide per million BTU actual heat input.

(xi) The Republic Steel Corporation, or any subsequent owner or operator of the Republic Steel facilities located in Lake County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack at the Republic Steel facility in excess of 4.21 pounds of sulfur dioxide per ton of actual process weight input.

(36) In Lawrence County:

(i) No owner or operator, unless otherwise specified below, of any industrial process equipment or fossil fuel-fired steam generator unit(s) shall cause or permit the combustion of gasses containing a total sulfur content expressed as hydrogen sulfide in excess of 235 grains of hydrogen sulfide per 100 dry standard cubic feet of gas; or the emission of sulfur dioxide from any stack in excess of 1.22 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The Marquette Cement Company or any subsequent owner or operator of the Marquette Cement Company facilities at Lawrence County, Ohio shall not cause or permit the emission of sulfur dioxide in excess of 73.0 pounds of sulfur dioxide per ton of actual process weight input.

(iii) The Dayton Malleable Iron Company or any subsequent owner or operator of the

Dayton Malleable Iron Company facilities at Lawrence County, Ohio shall not cause or permit the emission of sulfur dioxide in excess of the rates specified below:

(A) 2.00 pounds of sulfur dioxide per ton of actual process weight input at the holding furnaces.

(B) 5.40 pounds of sulfur dioxide per ton of actual process weight input at the Cupola.

(iv) The Allied Chemical Company or any subsequent owner or operator of the Semet Solvay Division at Lawrence County, Ohio shall not cause or permit the combustion of gases containing a total sulfur content expressed as hydrogen sulfide in excess of 165 grains of hydrogen sulfide per 100 dry standard cubic feet of gas, or 0.86 pounds of sulfur dioxide per million BTU actual heat input, at tar processing boilers 1, 2 and 3.

(v) The Allied Chemical Company or any subsequent owner or operator of the Specialty Chemicals Division in Lawrence County, Ohio, shall not cause or permit the emission of sulfur dioxide from any fossil fuel-fired steam generating unit in excess of 5.52 pounds of sulfur dioxide per million BTU actual heat input.

(37) In Licking County, no owner or operator of any oil-fired steam generating unit(s) shall cause or permit emission of sulfur dioxide from any stack in excess of 1.50 pounds of sulfur dioxide per million BTU actual heat input.

(38) In Lorain County, no owner or operator, unless otherwise specified in this subparagraph, shall cause or permit sulfur dioxide emissions from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units between 10.0 and 100 million BTU per hour total rated capacity of heat input, the maximum allowable emission rate from any stack shall be calculated by the following equation:

$$EL = 21.176Qm^{0.5477}$$

where Qm is the total rated capacity of heat input in million BTU per hour and EL is the allowable emission rate in pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired steam generating units equal to or greater than 100 million BTU per hour total rated capacity of heat input, the maximum allowable emission rate from any stack shall be 1.70 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The Cleveland Electric Illuminating Co. or any subsequent owner or operator of the Avon Lake Plant in Lorain County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack at Avon Lake Plant in excess 1.15 pounds of sulfur dioxide per million BTU actual heat input.

(iv) In lieu of meeting subparagraph (38)(iii), the Cleveland Electric Illuminating Company may elect, in accordance with the



compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

- (A)  $0.0891 (EL_1 + EL_2 + EL_3 + EL_4) + 0.1198 (EL_5 + EL_6) + 0.1578 EL_7 + 0.1041 EL_8 \leq 1$   
 (B)  $0.0548 (EL_1 + EL_2 + EL_3 + EL_4) + 0.0676 (EL_5 + EL_6) + 0.1067 EL_7 + 0.1240 EL_8 \leq 1$   
 (C)  $0.0909 (EL_1 + EL_2 + EL_3 + EL_4) + 0.1356 (EL_5 + EL_6) + 0.1546 EL_7 + 0.0799 EL_8 \leq 1$   
 (D)  $0.0943 (EL_1 + EL_2 + EL_3 + EL_4) + 0.1241 (EL_5 + EL_6) + 0.1606 EL_7 + 0.0844 EL_8 \leq 1$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purpose of this regulation each stack is identified as follows:

Stack No.	Boiler Identification
1 .....	1 & 2
2 .....	3 & 4
3 .....	5 & 6
4 .....	7 & 8
5 .....	9
6 .....	10
7 .....	11
8 .....	12

(v) The Cleveland Electric Illuminating Co. or any subsequent owner or operator of the Edgewater Plant located in Lorain County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Edgewater facility in excess of 3.40 pounds of sulfur dioxide per million BTU actual heat input.

(vi) The United States Steel Corporation or any subsequent owner or operator of the United States Steel facilities at Lorain County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at those facilities in excess of:

(A) For fossil fuel-fired steam generating units number 001 through 009: 1.20 pounds of sulfur dioxide per million BTU of actual heat input.

(B) For fossil fuel-fired steam generating units number 010 through 013: 0.50 pound of sulfur dioxide per million BTU of actual heat input.

(C) For all other fossil fuel-fired steam generating units, subparagraph (38) (i) or (33) (ii) shall apply, as applicable.

(vii) The United States Steel Corporation or any subsequent owner or operator of the United States Steel facilities at Lorain County, Ohio shall not cause or permit the combustion of by-product coke oven gas from any stack containing a total sulfur content expressed as hydrogen sulfide in excess of 75 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack in excess of 0.40 pound of sulfur dioxide per million BTU of actual heat input with exception that:

(A) For process operations 033 and 039, the United States Steel Corporation or any subsequent owner or operator of the United

States Steel facilities in Lorain County, Ohio, shall not cause or permit the combustion of by-product coke oven gas from any stack containing a total sulfur content expressed as hydrogen sulfide in excess of 35 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack in excess of 0.17 pounds of sulfur dioxide per million BTU of actual heat input.

(viii) The General Motors Corporation or any subsequent owner or operator of the Fisher Body Plant at Lorain County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Fisher Body Plant in excess of the rates specified below:

(A) 0.80 pounds of sulfur dioxide per million BTU of actual heat input for boiler number 001 and 002.

(B) 0.90 pounds of sulfur dioxide per million BTU of actual heat input for boiler number 004.

(C) For all other fossil fuel-fired steam generating units, subparagraph (38) (i) or (38) (ii) shall apply, as applicable.

(39) In Lucas County, no owner or operator of the following types of facilities, unless otherwise specified in this subparagraph, shall cause or permit sulfur dioxide emissions from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units burning coal the emission rate shall be

1.50 pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired steam generating units burning oil the emission rate shall be 1.00 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The Toledo Edison Company or any subsequent owner or operator of the Bayshore Station in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at the Bayshore Station in excess of the rates specified below:

(A) 1.20 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units burning coal.

(B) 0.50 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units burning oil.

(iv) Standard Oil of Ohio or any subsequent owner or operator of the STANDARD Oil of Ohio facility located in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at this facility in excess of the rates specified below:

(A) 0.29 pounds of sulfur dioxide per million BTU actual heat input for all process heaters and fossil fuel-fired steam-generating units unless otherwise specified in this subparagraph.

(B) 1.00 pounds of sulfur dioxide per million BTU actual heat input for process heaters or fossil fuel-fired steam-generating units numbered B024.

(C) 0.50 pounds of sulfur dioxide per million BTU actual heat input for process heater or fossil fuel-fired steam-generating unit number B021.

(D) 0.57 pounds of sulfur dioxide per million BTU actual heat input for process heaters of fossil fuel-fired steam-generating units numbered B009, B010, B018, B020, B023, and B025.

(E) 0.92 pounds of sulfur dioxide per 1,000 pounds of charging stock for catalytic cracking units and CO boilers connected to a common stack.

(F) 0.40 pounds of sulfur dioxide per ton of actual process weight input for any process.

(v) [Reserved]

(vi) The Coulton Chemical Company or any subsequent owner or operator of the Coulton Chemical facility in Lucas County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Coulton Chemical facility in excess of the rates specified below:

(A) 0.80 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units or process heaters.

(B) 1.10 pounds of sulfur dioxide per ton of 100 percent sulfuric acid produced for sulfuric acid production units.

(vii) The Toledo Edison Company or any subsequent owner or operator of the Acme

Power Plant in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack in excess of the rates specified below:

(A) 3.00 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units burning coal.

(B) 1.00 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units burning oil.

(viii) Gulf Oil or any subsequent owner or operator of the Gulf Oil facility in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at the Gulf Oil facility in excess of the rates specified below:

(A) 0.81 pounds of sulfur dioxide per million BTU actual heat input for process heaters or fossil fuel-fired steam-generating units numbered B001, B002, B003, B004, B005, B006, B007, and B008.

(B) 0.60 pounds of sulfur dioxide per million BTU actual heat input for process heater or fossil fuel-fired steam-generating unit B009.

(C) 0.50 pounds of sulfur dioxide per million BTU actual heat input for process heater or fossil fuel-fired steam-generating unit B013.

(D) 0.40 pounds of sulfur dioxide per million BTU actual heat input for process heaters or fossil fuel-fired steam-generating unit B014.

(E) 1.85 pounds of sulfur dioxide per 1,000 pounds of charging stock for catalytic cracking units and CO boilers connected to the same stack.

(F) 200 pounds of sulfur dioxide per 1,000 pounds of sulfur processed for sulfur recovery plants.

(G) Gulf Oil or any subsequent owner or operator of facilities located in Lucas County, Ohio shall not cause or permit the combustion of refinery fuel gas at process heaters or fossil fuel gas-fired steam-generating units numbered B010, B011, B012, B015, B017, B018, B019, and B020 containing a total sulfur content expressed as hydrogen sulfide in excess of 10 grains of hydrogen sulfide per 100 dry standard cubic feet of refinery fuel gas or the emission of sulfur dioxide from any stack at the above units in excess of 0.04 pounds of sulfur dioxide per million BTU actual heat input.

(H) Gulf Oil or any subsequent owner or operator of the Gulf Oil facilities located in Lucas County, Ohio shall operate only one of the units numbered B001, B002, B003 and B004 simultaneously with units numbered B005, B006 or B016.

(xi) The Toledo Edison Company or any subsequent owner or operator of the Water Street Steam Plant in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at the Water Street Station in excess of 1.06 pounds of sulfur dioxide per million BTU actual heat input.

(x) Phillips Petroleum Company or any subsequent owner or operator of the Toledo Philblack Plant in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at the Toledo Philblack Plant in excess of the rates specified below:

(A) 4.67 pounds of sulfur dioxide per million BTU actual heat input for any process dryer.

(B) 4.99 pounds of sulfur dioxide per million BTU actual heat input for all fossil fuel-fired steam-generating units, processes and incinerator unless otherwise specified in this subparagraph.

(xi) Interlake Steel or any subsequent owner or operator of the Interlake Steel facility in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at this facility in excess of the rates specified below:

(A) 0.10 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units.

(B) 4.00 pounds of sulfur dioxide per ton of actual process weight input for any process.

(xii) Nabisco or any subsequent owner or operator of the Nabisco facility in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at this facility in excess of 1.20 pounds of sulfur dioxide per million BTU actual heat input.

(xiii) The Toledo Hospital or any subsequent owner or operator of the Toledo Hospital in



Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at this facility in excess of 3.50 pounds of sulfur dioxide per million BTU actual heat input.

(xiv) Sun Oil or any subsequent owner or operator of the Sun Oil facility in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at the Sun Oil facility in excess of the rates specified below:

(A) Unless otherwise specified in this subparagraph, the combustion of refinery fuel gas containing a total sulfur content expressed as hydrogen sulfide in excess of 10 grains of hydrogen sulfide per 100 dry standard cubic feet of refinery fuel gas or the emission of sulfur dioxide from any stack at this facility in excess of 0.04 pounds of sulfur dioxide per million BTU actual heat input.

(B) 0.0 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units or process operation heaters numbered 502, 504, 1901, 1902, 1903, 1904, 1905, and 1906.

(C) 3.50 pounds of sulfur dioxide per 1,000 pounds of charging stock for catalytic cracking units and CO boilers connected to the same stack.

(D) 1.60 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units or process heaters numbered 301, 304, 507, 508, and 1910

and 113.4 pounds of sulfur dioxide per 1,000 pounds of sulfur processed for sulfur recovery plants.

(E) In lieu of compliance with subparagraph (D) of this subparagraph in accordance with section 52.1882 (b) (4), Sun Oil or any subsequent owner or operator of the Sun Oil facility in Lucas County, Ohio may elect the following emission limitations: 1.00 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units or process heaters numbered 301, 304, 507, 508 and 1910 and 200 pounds of sulfur dioxide per 1,000 pounds of sulfur processed for sulfur recovery plants.

(xv) Seneca Petroleum or any subsequent owner or operator of the Seneca Petroleum facility in Lucas County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at the Seneca Petroleum facility in excess of 1.20 pounds of sulfur dioxide per million BTU actual heat input.

(40) In Mahoning County, no owner or operator, unless otherwise specified in this subparagraph, shall cause or permit the emission of sulfur dioxide in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units: 0.50 pounds of sulfur dioxide per million BTU of actual heat input.

(ii) For process operations: 1.00 pounds of sulfur dioxide per ton of actual process weight input.

(iii) No owner or operator shall cause or permit the combustion of by-product coke oven gas from any stack containing a total sulfur content expressed as hydrogen sulfide in excess of 135 grains hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack in excess of 0.68 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The Ohio Edison Company or any subsequent owner or operator of the North Avenue Steam Plant located in Mahoning County shall not cause or permit the emission of sulfur dioxide from any stack at the North Avenue Steam Plant in excess of 2.00 pounds of sulfur dioxide per million BTU of actual heat input.

(v) Lonardo & Sons Greenhouse or any subsequent owner or operator of the Lonardo & Sons Greenhouse facilities located in Mahoning County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at Lonardo and Sons Greenhouse in excess of 2.00 pounds of sulfur dioxide per million BTU actual heat input.

(vi) Whiteacre-Greer Fireproofing or any subsequent owner or operator of the Whiteacre-Greer facilities located at Mahoning County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at Whiteacre-Greer in excess of 20 pounds of sulfur dioxide per ton of actual process weight input.

(vii) The Koppers Company or any subsequent owner or operator of the Koppers Company facilities located in Mahoning County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at Koppers Company in excess of 2.00 pounds of sulfur dioxide per million BTU actual heat input.

(41) In Marion County:

(i) No owner or operator of any process equipment shall cause or permit the emissions of sulfur dioxide from any stack in excess of 4.20 pounds of sulfur dioxide per million BTU actual heat input.

(ii) No owner or operator of any fossil fuel-fired steam generating unit(s) shall cause or permit the emission of sulfur dioxide from any stack in excess of 6.10 pounds of sulfur dioxide per million BTU actual heat input.

(42) In Medina County, no owner or operator of any fossil fuel-fired steam generating unit shall cause or permit the emission of sulfur dioxide from any stack in excess of 8.00 pounds of sulfur dioxide per million BTU actual heat input.

(43) In Meigs County, no owner or operator of any process shall cause or permit the emission of sulfur dioxide from any stack in excess of 11.0 pounds of sulfur dioxide per ton of actual process weight input.

(44) In Mercer County, no owner or operator of any fossil fuel-fired steam generating unit(s) shall cause or permit the emission of sulfur dioxide from any stack in excess of 8.00 pounds of sulfur dioxide per million BTU actual heat input.

## (45) In Miami County:

(i) No owner or operator of any fossil fuel-fired steam generating unit, unless otherwise specified in this subparagraph shall cause or permit the emission of sulfur dioxide from any stack in excess of 3.20 pounds of sulfur dioxide per million BTU actual heat input.

(ii) No owner or operator of any process shall cause or permit the emission of sulfur dioxide from any stack in excess of 65.0 pounds of sulfur dioxide per ton of actual process weight input.

(iii) No present or subsequent owner of the Piqua Municipal Power Plant located in Miami County, Ohio shall cause or permit the emission of sulfur dioxide from any stack in excess of 4.78 pounds of sulfur dioxide per million BTU of actual heat input.

(iv) In lieu of meeting subparagraph (45) (iii), the Piqua Municipal plant may elect, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

$$(1) .0730 (EL_1 + EL_2) + .0628 EL_3 \leq 1$$

$$(2) .0700(EL_1 + EL_2) + .0663 EL_3 \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1,2
2 .....	3
3 .....	4

(46) In Montgomery County, no owner or operator of any fossil fuel-fired steam generating unit(s), unless otherwise specified in this subparagraph, shall cause or permit sulfur dioxide emissions in excess of the rates specified below:

(i) 1.60 pounds sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam generating units.

(ii) The Dayton Power and Light Company or any subsequent owner or operator of the Yankee Substation and the Monument Substation located in Montgomery County, Ohio, shall not cause or permit the emission of sulfur dioxide from any diesel oil-fired electric generating unit stack at these stations in excess of 0.65 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The Dayton Power and Light Company or any subsequent owner or operator of the Tait Power Plant in Montgomery County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Tait Plant in excess of 1.25 pounds of sulfur dioxide per million BTU actual heat input for coal-fired units and 0.65 pounds of sulfur dioxide per million BTU actual heat input for diesel oil-fired electric generating units.

(iv) The Dayton Power and Light Company or any subsequent owner or operator of the Hutchings Power Plant in Montgomery County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Hutchings Plant in excess of 1.20 pounds of sulfur dioxide per million BTU actual heat input for coal-fired units and 0.65 pounds sulfur dioxide per million BTU actual heat input for diesel oil-fired electric generating units.

(v) In lieu of meeting subparagraph (46) (iv), for the coal-fired units, the Dayton Power and Light Company may elect, in accordance with the compliance schedule provision of § 52.1882, to comply with the emission limitations which will satisfy the following equation:

$$(1) 0.230 EL_1 + 0.297 EL_2 + 0.306 EL_3 \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purpose of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1, 2
2 .....	3, 4
3 .....	5, 6

(vi) The Delco Corporation or any subsequent owner or operator of the Moraine facility in Montgomery County, Ohio shall not cause or permit the emission of sulfur dioxide from any fossil fuel-fired steam generating unit stack at the Moraine facility in excess of

1.30 pounds of sulfur dioxide per million BTU actual heat input.

(vii) The Defense Electronics Supply facility, or any subsequent owner or operator of this facility in Montgomery County, Ohio shall not cause or permit the emission of sulfur dioxide from any fossil fuel-fired steam generating unit stack at the facility in excess of .95 pounds of sulfur dioxide per million BTU actual heat input.

(viii) No owner or operator of any process equipment shall cause or permit the emission from any stack any process gas stream containing sulfur dioxide in excess of 2.60 pounds of sulfur dioxide per ton of actual process weight input.

(47) In Morgan County:

(i) The Ohio Power Company or any subsequent owner or operator of the Muskingum River Power Plant in Washington and Morgan Counties, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Muskingum River plant in excess of 6.48 pounds of sulfur dioxide per million BTU actual heat input.

(ii) In lieu of meeting subparagraph (47) (i), the Ohio Power Company may elect, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all the following equations:

$$(A) 0.0773 EL_1 + 0.0622 EL_2 \leq 1$$

$$(B) 0.0640 EL_1 + 0.0902 EL_2 \leq 1$$



where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$ , and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1, 2, 3, 4
2 .....	5

(48) In Muskingum County:

(i) The Ohio Power Company or any subsequent owner or operator of the Philo Power Plant in Muskingum County, Ohio, shall not cause or permit the emission of sulfur dioxide from any stack at the Philo plant in excess of 1.14 pounds of sulfur dioxide per million BTU actual heat input.

(ii) In lieu of meeting subparagraph (48) (i), the Ohio Power Company may elect, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

$$(A) 0.3288 EL_1 + 0.3301 EL_2 + 0.1583 EL_3 \leq 1$$

$$(B) 0.3588 EL_1 + 0.3605 EL_2 + 0.1557 EL_3 \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
4 .....	41, 42, 34, 38
5 .....	51, 52
6 .....	6

(iii) No owner or operator of any process equipment in Muskingum County, Ohio shall cause or permit the emission of sulfur dioxide from any stack in excess of 58.0 pounds of sulfur dioxide per ton of actual process weight input.

(49) In Ottawa County:

(i) No owner or operator of any fossil fuel steam generating unit shall cause or permit the emission of sulfur dioxide from any stack in excess of 5.90 pounds of sulfur dioxide per million BUT actual heat input.

(ii) No owner or operator of any process equipment shall cause or permit the emission of sulfur dioxide from any stack in excess of that permitted by the following equation:

$$EL = 47.404P^{0.520}$$

where  $EL$  is the allowable emission rate in pounds of sulfur dioxide per ton of actual process weight input and  $P$  is the design process weight input rate in tons per hour.

(50) In Paulding County, no owner or operator of any process equipment shall cause or permit the emission of sulfur dioxide from any stack in excess of 43.0 pounds of sulfur dioxide per ton of actual process weight input.

(51) In Pickaway County:

(i) The Columbus and Southern Ohio Power Company or any subsequent owner or operator of the Picway Power Plant in Pickaway County, Ohio, shall not cause or

permit the emission of sulfur dioxide from any stack at the Picway plant in excess of 6.04 pounds sulfur dioxide per million BTU actual heat input.

(ii) In lieu of meeting subparagraph (51) (i), the Columbus and Southern Ohio Power Company may elect, in accordance with the compliance schedule provision of § 52.1882, to comply with the emission limitations which will satisfy all of the following equations:

$$(A) 0.0764 EL_1 + 0.0759 EL_2 + 0.0133 EL_3 \leq 1$$

$$(B) 0.0487 EL_1 + 0.0484 EL_2 + 0.0522 EL_3 \leq 1$$

where  $EL_i$  is the emission limitation (pounds per million BTU) per stack  $i$ , and  $i$  is the stack number. For purpose of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	3
2 .....	4
3 .....	5

(iii) No owner or operator of any oil-fired steam generating unit in Pickaway County, Ohio shall cause or permit the emission of sulfur dioxide from any stack in excess of 0.85 pounds of sulfur dioxide per million BTU actual heat input.

(52) In Pike County, no owner or operator of any fossil fuel-fired steam generating unit shall cause or permit the emission of sulfur dioxide from any stack in excess of 7.00 pounds of sulfur dioxide per million BTU of actual heat input.

(53) In Richland County:

(i) No owner or operator of any process equipment shall cause or permit emissions of sulfur dioxide in excess of 7.10 pounds of sulfur dioxide per ton of actual process weight input.

(ii) The Westinghouse Electric Company, or any subsequent owner or operator of the Westinghouse Electric Company facility at Richland County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 4.50 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The General Motors Corporation, or any subsequent owner or operator of the Fisher Body Division Plant at Richland County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 3.10 pounds of sulfur dioxide per million BTU of actual heat input.

(iv) The City of Shelby, or any subsequent owner or operator of the Shelby Municipal Power Plant at Richland County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 9.3 pounds of sulfur dioxide per million BTU actual heat input.

(54) In Ross County, the Mead Corporation or any subsequent owner or operator of the Mead Corporation facilities at Ross County, Ohio shall not cause or permit emission of sulfur dioxide from any stack in excess of the following rates:

(i) 4.90 pounds of sulfur dioxide per ton of actual solids input.

(ii) 0.00 pounds of sulfur dioxide per million BTU actual heat input for stacks 1, 2, 3, and 4. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1.
2 .....	2.
3 .....	3.
4 .....	Chilpalco No. 5.

(55) In Sandusky County:

(i) No present or subsequent owner or operator of any fossil fuel-fired steam generator unit(s) shall cause or permit emissions of sulfur dioxide from any stack in excess of 7.00 pounds of sulfur dioxide per million BTU actual heat input.

(ii) The J.E. Baker Company or any subsequent owner or operator of the J.E. Baker Company facilities in Sandusky County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 48.75 tons of sulfur dioxide per ton of actual process weight input.

(iii) The Woodville Lime Company, or any subsequent owners or operator of the Woodville Lime Company facilities in Sandusky County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 8.48 pounds of sulfur dioxide per ton of actual process weight input.

(iv) The Martin Marietta Company or any subsequent owner or operator of the Martin Marietta facilities in Sandusky County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 15.42 pounds of sulfur dioxide per ton of actual process weight input.

(v) The Ohio Lime Company or any subsequent owner or operator of the Ohio Lime Company facilities in Sandusky County, Ohio shall not cause or permit emissions of sulfur dioxide from any stack in excess of 17.04 pounds of sulfur dioxide per ton of actual process weight input.

(56) In Scioto County:

(i) Empire Detroit Steel or any subsequent owner or operator of the Empire Detroit Steel coke oven facility at Scioto County, Ohio shall not cause or permit the combustion of by-product coke oven gas from any stack containing a total sulfur content expressed as hydrogen sulfide in excess of 800 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack in excess of 4.10 pounds of sulfur dioxide per million BTU actual heat input.

(ii) No owner or operator of any oil-fired steam generating unit shall cause or permit the emission of sulfur dioxide from any stack in excess of 0.60 pounds of sulfur dioxide per million BTU actual heat input.

(iii) No owner or operator of any coal-fired steam generating unit shall cause or permit

the emission of sulfur dioxide from any stack in excess of 6.90 pounds of sulfur dioxide per million BTU actual heat input.

(57) In Seneca County:

(i) No present or any subsequent owner or operator of any fossil fuel-fired steam generating unit(s) at Seneca County, Ohio shall cause or permit the emissions of sulfur dioxide from any stack in excess of the limits specified below:

(A) 1.20 pounds of sulfur dioxide per million BTU actual heat input for oil fired units.

(B) 8.20 pounds of sulfur dioxide per million BTU actual heat input for coal fired units.

(ii) No present or any subsequent owner or operator of process equipment, unless otherwise specified in this subparagraph, shall cause or permit the emissions of sulfur dioxide from any stack in excess of 34.0 pounds of sulfur dioxide per ton of actual process weight input.

(iii) The Union Carbide Corporation, or any subsequent owner or operator of the Union Carbide Corporation facilities at Seneca County, Ohio shall not cause or permit emissions of sulfur dioxide from any stack in excess of the limits specified below:

(A) 552 pounds of sulfur dioxide per ton of actual process weight input at the calcining furnace.

(B) 176 pounds of sulfur dioxide per ton of actual process weight input at the activating furnace.

(58) In Stark County, no owner or operator of the following types of facilities, unless otherwise specified in this subparagraph, shall cause or permit emission of sulfur dioxide from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units between 10.0 and 60.0 million BTU per hour total rated capacity of heat input, the emission rate in pounds of sulfur dioxide per million BTU actual heat input shall be calculated by the following equation:

$$EL = 18.48Qm^{0.4998}$$

4m060, where Qm is the total rated capacity of heat input in million BTU per hour and EL is the allowable emission rate in pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired steam generating units equal to or greater than 60 million BTU per hour total rated capacity of heat input: 2.50 pounds of sulfur dioxide per million BTU actual heat input.

(iii) Republic Steel Corporation or any subsequent owner or operator of the Massillon facilities in Stark County, Ohio shall not cause or permit the emission of sulfur dioxide from any fossil fuel-fired steam generating unit stack at the Massillon facility in excess of 4.40 pounds of sulfur dioxide per million BTU actual heat input.



(iv) The present or any subsequent owner or operator of the Massillon State Hospital facilities in Stark County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 5.20 pounds of sulfur dioxide per million BTU actual heat input.

(v) The present or any subsequent owner or operator of the Grief Board Company facilities in Stark County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 0.50 pounds of sulfur dioxide per million BTU actual heat input.

(vi) The present or any subsequent owner or operator of the Timken Steel Company facilities in Stark County, Ohio shall not cause or permit the emission of sulfur dioxide from any fossil fuel-fired steam generating unit(s) stack at this facility in excess of the rates specified below:

(A) 3.08 pounds of sulfur dioxide per million BTU actual heat input for the stack common to the fossil fuel-fired steam-generating units B001 and B002 at the Gambrinus plant.

(B) 0.93 pounds of sulfur dioxide per million BTU actual heat input for the fossil fuel-fired steam-generating unit B003 at the Gambrinus plant.

(C) 0.0 pounds of sulfur dioxide per million BTU actual heat input for the fossil fuel-fired steam-generating units B003 and B004 at the Canton Number 5 Plant.

(D) 0.67 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating at the Canton Number 5 Plant unless otherwise specified in this subparagraph.

(vii) No owner or operator of any by-product coke oven operating in Stark County, Ohio shall cause or permit the combustion of by-product coke oven gas containing a total sulfur content expressed as hydrogen sulfide in excess of 350 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or the emission of sulfur dioxide from any stack in excess of 1.70 pounds of sulfur dioxide per million BTU actual heat input.

(viii) No owner or operator of any process equipment in Stark County, Ohio shall cause or permit the emission of sulfur dioxide from any stack in excess of 80.0 pounds of sulfur dioxide per ton of actual process weight input.

(ix) The Ashland Oil Company, or any subsequent owner or operator of the Ashland Oil Company facilities in Stark County, Ohio shall not cause or permit sulfur dioxide emissions from any stack at this facility in excess of the emission limitations listed below for the different sources.

(A) 1.20 pounds of sulfur dioxide per million BTU actual heat input to the stacks identified by Ashland Oil Company as 4-16-B-11 and 4-9-B-6.

(B) 0.47 pounds of sulfur dioxide per million BTU actual heat input for all process heaters and fossil fuel-fired steam-generating units unless otherwise specified in this subparagraph.

(C) 0.84 pounds of sulfur dioxide per 1,000 pounds of charging stock for catalytic cracking units.

(D) 50 pounds of sulfur dioxide per 1,000 pounds of sulfur processed for sulfur recovery plants.

(59) In Summit County, no owner or operator of the following types of facilities, unless otherwise specified in this subparagraph, shall cause or permit emissions of sulfur dioxide from any stack in excess of the rates specified below:

(i) For fossil fuel-fired steam generating units between 10.0 and 300 million BTU per hour total rated capacity of heat input, the emission rate in pounds of sulfur dioxide per million BTU actual heat input shall be calculated by the following equation:

$$EL = 17.55 Q_m^{-0.3993}$$

where  $Q_m$  is the total rated capacity of heat input in million BTU per hour and  $EL$  is the allowable emission rate in pounds of sulfur dioxide per million BTU actual heat input.

(ii) For fossil fuel-fired steam generating unit(s) equal to or greater than 300 million BTU per hour total rated capacity of heat input, 1.80 pounds of sulfur dioxide per million BTU actual heat input.

(iii) The present or subsequent owner or operator of the Diamond Crystal facility in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 6.10 pounds of sulfur dioxide per million BTU actual heat input.

(iv) The present or subsequent owner or operator of the Akwell Industries facilities in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 3.60 pounds of sulfur dioxide per million BTU actual heat input.

(v) The present or subsequent owner or operator of the Ohio Brass Company facilities in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 4.20 pounds of sulfur dioxide per million BTU actual heat input.

(vi) The present or subsequent owner or operator of the Sieberling Rubber Company facilities in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 1.33 pounds of sulfur dioxide per million BTU actual heat input.

(vii) The present or subsequent owner or operator of the Firestone Tire and Rubber Company facilities in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 1.78 pounds of sulfur dioxide per million BTU actual heat input.

(viii) The present or subsequent owner or operator of the B. F. Goodrich Tire and Rubber Company facilities in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 2.71 pounds of sulfur dioxide per million BTU actual heat input.

(ix) The Goodyear Tire and Rubber Company or any subsequent owner or operator of the Goodyear facilities in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of the rates specified below:

(A) 3.96 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating unit B001 located at Plant I

(B) 1.80 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating units B002 and B003 located at Plant I.

(C) 1.84 pounds of sulfur dioxide per million BTU actual heat input for all fossil fuel-fired steam-generating units located at Plant II.

(D) 100 pounds of sulfur dioxide per 1,000 pounds of sulfur processed for the sulfur recovery unit(s).

(x) The present or any subsequent owner or operator of the Tecumseh Company facilities in Summit County, Ohio shall not cause or permit sulfur dioxide emissions from fossil fuel-fired steam generating unit(s) in excess of the rates specified below:

(A) 1.70 pounds sulfur dioxide per million BTU actual heat input for coal-fired units, and

(B) 0.70 pounds sulfur dioxide per million BTU actual heat input for oil-fired unit(s).

(xi) The Ohio Edison Company or any subsequent owner or operator of the Ohio Edison Company's Beech Street Power Station in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Beech Street Plant in excess of 2.71 pounds of sulfur dioxide per million BTU actual heat input.

(xii) The Ohio Edison Company or any subsequent owner or operator of the Ohio Edison Company's Gorge Plant in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the Gorge Plant in excess of 2.56 pounds of sulfur dioxide per million BTU actual heat input.

(xiii) No owner or operator of any process equipment, unless otherwise specified in this subparagraph, shall cause or permit the emission of sulfur dioxide from any stack containing sulfur dioxide in excess of 17.0 pounds of sulfur dioxide per ton of actual process weight input.

(xiv) PPG Industries or any subsequent owner or operator of the PPG Industries facilities located in Summit County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of the rates specified below:

(A) 1.78 pounds of sulfur dioxide per million BTU actual heat input for fossil fuel-fired steam-generating unit(s).

(B) 0.0 pounds of sulfur dioxide per ton actual process weight input for the kilns.

(60) In Trumbull County:

(i) No owner or operator, unless otherwise specified in the subparagraph, shall cause or permit the emission of sulfur dioxide from any stack in excess of 3.00 pounds of sulfur dioxide per million BTU actual heat input for coal-fired steam generating units.

(ii) No owner or operator, unless otherwise specified in this subparagraph, shall cause or permit the emission of sulfur dioxide from any stack in excess of 1.00 pounds of sulfur dioxide per million BTU actual heat input for oil-fired steam-generating units.

(iii) The Republic Steel Company or any subsequent owner or operator of the Republic Steel facilities in Trumbull County, Ohio shall not cause or permit the emission of sulfur dioxide from fossil fuel-fired steam-generating unit number B001 in excess of 1.60 pounds of sulfur dioxide per million BTU actual heat input and from process operation P001 in excess of 1.00 pounds of sulfur dioxide per million BTU of actual heat input.

(iv) Republic Steel Corporation or any subsequent owner or operator of the Republic Steel facilities in Trumbull County, Ohio shall not cause or permit the combustion of

by-product coke oven gas containing a total sulfur content expressed as hydrogen sulfide in excess of 300 grains of hydrogen sulfide per 100 dry standard cubic feet of coke oven gas or 1.52 lbs.  $\text{SO}_2$ /MMBTU actual heat input.

(v) No owner or operator of any process, unless otherwise specified in this subparagraph, shall cause or permit the emission of sulfur dioxide from any stack in excess of 2.00 pounds of sulfur dioxide per million BTU of actual heat input to the process operation.

(vi) The Ohio Edison Company or any subsequent owner or operator of the Niles Power Plant located in Trumbull County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack in excess of 5.41 pounds of sulfur dioxide per million BTU of actual heat input.

(vii) In lieu of meeting subparagraph (60) (vi), the Ohio Edison Company may elect, in accordance with the compliance schedule provisions of § 52.1882, to comply with the emission limitations which will satisfy the following equation:

$$(A) 0.0923 (EL_1 + EL_2) \leq 1$$

where  $EL_1$  is the emission limitation (pounds per million BTU) per stack  $i$  and  $i$  is the stack number. For purpose of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1	1
2	2



(viii) The United States Steel Corporation or any subsequent owner or operator of the McDonald Mills in Trumbull County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at the McDonald Mills in excess of 0.50 pounds of sulfur dioxide per million BTU actual heat input.

(61) In Tuscarawas County:

(i) The present or subsequent owner or operator of the Dover Municipal Power Plant in Tuscarawas County, Ohio shall not cause or permit the emission of sulfur dioxides from any stack at this facility in excess of 4.60 pounds of sulfur dioxide per million BTU actual heat input.

(ii) No owner or operator of any process shall cause or permit the emission of sulfur dioxide from any stack in excess of 37.0 pounds of sulfur dioxide per ton of actual process weight input.

(62) In Vinton County, no owner or operator of any fossil fuel-fired steam generating unit shall cause or permit the emission of sulfur dioxide from any stack in excess of 4.80 pounds of sulfur dioxide per million BTU actual heat input.

(63) In Washington County:

(i) The Ohio Power Company or any subsequent owner or operator of the Muskingum River Power Plant in Morgan and Washington Counties, Ohio shall not cause or permit the emission of sulfur dioxide from any

stack at the Muskingum River Plant in excess of 6.48 pounds of sulfur dioxide per million BTU of actual heat input.

(ii) In lieu of meeting subparagraph (63) (i), the Ohio Power Company may elect, in accordance with the compliance schedule provisions of § 52.1822, to comply with the emission limitations which will satisfy all the following equations:

$$(A) 0.0773 EL_1 + 0.0622 EL_2 \leq 1$$

$$(B) 0.0640 EL_1 + 0.0902 EL_2 \leq 1$$

where  $EL_1$  is the emission limitation (pounds per million abtu) per stack  $i$  and  $i$  is the stack number. For purposes of this regulation each stack is identified as follows:

Stack No.:	Boiler Identification
1 .....	1, 2, 3, 4
2 .....	5

(iii) The Shell Oil Company or any subsequent owner or operator of the Shell Oil facilities at Washington County, Ohio shall not cause or permit the emission of sulfur dioxide from any stack at this facility in excess of 2.50 pounds of sulfur dioxide per million BTU actual heat input.

(64) In Wayne County, no present or subsequent owner or operator of fossil fuel-fired steam generating units at the facilities listed below shall cause or permit emissions of sulfur dioxide in excess of 7.00 pounds of sulfur dioxide per million BTU actual heat input:

- (A) Morton Salt Company
- (B) Packaging Corporation of America
- (C) Orrville Municipal Power Plant

(65) In Wood County, no owner or operator of any fossil fuel-fired steam generating unit or process operation heater shall cause or permit the emission of sulfur dioxide from any stack in excess of 1.10 pounds of sulfur dioxide per million BTU actual heat input.

[39 FR 13542, Apr. 15, 1974, as amended at 41 FR 36328, Aug. 27, 1976; 41 FR 52455, Nov. 30, 1976; 41 FR 27589, May 31, 1977]

#### § 52.1882 Compliance schedules.

(a) Federal compliance schedules.

(1) Except as provided in subparagraph (5) of this paragraph, the owner or operator of any process equipment subject to applicable subparagraphs of § 52.1881 (b), shall comply with the compliance schedule in paragraph (a) (2) of this section.

(2) Any owner or operator of any process equipment subject to applicable paragraphs of § 52.1881 (b) of this Chapter shall take the following actions to comply with the requirements of said regulation with respect to that source no later than the date specified.

(i) 8 weeks from the date of promulgation — Submit preliminary control plans to the Administrator.

(ii) 25 weeks from the date of promulgation — Submit final control plan to the administrator.

(iii) 34 weeks from the date of promulgation — Award contracts for emissions control systems or process modification, or issue orders for purchase of component parts to accomplish emission control or process modification and notify the Administrator in writing that such action was taken.

(vi) 52 weeks from the date of promulgation — Initiate on-site construction of installation of emission control equipment or process change and notify the Administrator in writing that such action was taken.

(v) 139 weeks from the date of promulgation — Complete construction or installation of emission control equipment or process change and notify the Administrator in writing that such action was taken.

(vi) 154 weeks from the date of promulgation — Complete shakedown operations and performance test on source, submit

performance test results to the Administrator and achieve final compliance with § 52.1881 (b) of this chapter, as applicable.

(3) Except as provided in subparagraph (5) of this paragraph, the owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to § 52.1881 (b) of this chapter shall comply the applicable compliance schedule in paragraph (a) (4) of this section.

(4) (i) The owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to § 52.1881 (b) of this chapter who elects to comply with an applicable optional emission limitation specified in § 52.1881 (b) of this chapter, shall notify the Administrator no later than eight weeks after the date of this promulgation of the specific emission limitations selected. Failure to select applicable optional emission limitations shall result in the facility being subject to the single uniform emission limitation for all stacks at that facility specified in § 52.1881 (b). Notice received later than eight weeks after the date of promulgation shall be invalid.

(ii) The owner or operator of any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter shall notify the Administrator no later than eight weeks after the date of promulgation of his intent to utilize either low-sulfur fuel including blended or washed coal or flue gas desulfurization to comply with the requirements of said regulation.

(iii) Any owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter who elects to utilize low-sulfur fuel including blended or washed coal to comply with the requirements of said regulation shall take the following actions with respect to that source no later than the date specified:

(a) 8 weeks from the date of promulgation — Submit to the Administrator a projection for 10 years of the amount of fuel by types that will be substantially adequate to enable compliance with § 52.1881 (b) of this chapter, as applicable.

(b) 32 weeks from the date of promulgation — Submit data demonstrating the availability of the fuel meeting the requirements projected in subparagraph (a) to the Administrator.

(c) 36 weeks from the date of promulgation — Submit a statement to the Administrator as to whether boiler modifications will or will not be required. If modifications will be required, submit plans for such modifications.

(d) 50 weeks from the date of promulgation — Let contracts for necessary boiler modifications, if applicable, and notify the Administrator in writing that such action was taken.

(e) 60 weeks from the date of promulgation — Initiate on-site modifications, if applicable, and notify the Administrator in writing that such action was taken.

(f) 118 weeks from the date of promulgation — Complete on-site modification, if applicable, and notify the Administrator in writing that such action was taken.

(g) 122 weeks from the date of promulgation — Achieve final compliance with the emission limitation of § 52.1881 (b) of this chapter, as applicable, and notify the Administrator in writing that such action was taken.

(iv) Any owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter to elects to utilize flue gas desulfurization to comply with the requirements of said regulations shall take the following actions with respect to the source no later than the date specified.

(a) 17 weeks from the date of promulgation — Let necessary contracts for construction and notify the Administrator in writing that such action was taken.

(b) 61 weeks from the date of promulgation — Initiate on-site construction and notify the Administrator in writing that such action was taken.

(c) 145 weeks from the date of promulgation — Complete on-site construction and notify the Administrator in writing what such action was taken.

(d) 156 weeks from the date of promulgation — Complete shakedown operations and performance test on source, submit

performance test results to the Administrator and achieve final compliance with § 52.1881 (b) of this chapter, as applicable.

(5) (i) None of the preceding subparagraphs of this paragraph shall apply to any owner or operator of a source which is presently in compliance with the applicable subparagraphs of § 52.1881 (b) of this chapter.

(ii) Any owner or operator of a source capable of emitting 100 tons of sulfur dioxide per year from all stacks at any facility who is presently in compliance with the applicable subparagraphs of § 52.1881 (b) of this chapter shall so certify to the Administrator by four weeks from the date of promulgation.

(iii) Any owner or operator subject to a compliance schedule in this paragraph who elects to achieve compliance by means not covered by this paragraph may submit to the Administrator no later than six weeks from the date of promulgation a proposed alternative compliance schedule. For process equipment subject to applicable subparagraphs of 52.1881 (b) of this chapter no such compliance schedule may provide for final compliance after the final compliance date in subparagraph (2) of this paragraph. For any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter, which will utilize low-sulfur fuel including blended or washed coal to comply with the requirements of said regulations, no such compliance schedule may provide for final compliance after final compliance date in



subparagraph (4) (iii) of this paragraph. For any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter, which will utilize flue gas desulfurization to comply with the requirements of said regulations, no such compliance schedule may provide for final compliance after the final compliance date in subparagraph (4) (iv) of this paragraph.

(iv) Any owner or operator of any process equipment subject to applicable subparagraphs of § 52.1881 (b) of this chapter who submits an alternative compliance schedule pursuant to § 52.1882 (a) (5) (iii) of this chapter shall remain subject to the provisions of § 52.1882 (a) (2) of this chapter until the alternative schedule is approved by the Administrator.

(v) Any owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter who submits an alternative compliance schedule pursuant to § 52.1882 (a) (5) (iii) of this chapter shall remain subject to the provisions of § 52.1882 (a) (4) of this chapter until the alternative schedule is approved by the Administrator.

(6) Nothing in this paragraph shall preclude the Administrator from promulgating a separate schedule for any source to which the application of the compliance schedules in paragraphs (d) (2), or (4) of this section fails to satisfy the requirements of § 52.15 (b) and (c) of this Chapter.

(b) Federal compliance schedule for petitioners in *Buckeye Power, Inc. et al v. USEPA*, No. 76-2090 et al.

(1) Except as provided in paragraph (b) (5) of this section, the owner or operator of any process equipment subject to applicable subparagraphs of § 52.1881 (b) shall comply with the compliance schedule in paragraph (a) (2) of this section.

(2) Any owner or operator of any process equipment subject to applicable paragraphs of § 52.1881 (b) of the Chapter shall take the following actions to comply with the requirements of said regulation with respect to that source no later than the date specified.

(i) 8 weeks from June 17, 1977: Submit preliminary control plans to the Administrator.

(ii) 25 weeks from June 17, 1977: Submit final control plan to the Administrator.

(iii) 34 weeks from June 17, 1977: Award contracts for emissions control systems or process modification, or issue orders for purchase of component parts to accomplish emission control or process modification and notify the Administrator in writing that such action was taken.

(iv) 52 weeks from June 17, 1977: Initiate on-site construction or installation of emission control equipment or process change and notify the Administrator in writing that such action was taken.

(v) 139 weeks from June 17, 1977: Complete construction or installation of emission control

equipment or process change and notify the Administrator in writing that such action was taken.

(vi) 154 weeks from June 17, 1977: Complete shakedown operations and performance test on source, submit performance test results to the Administrator and achieve final compliance with § 52.1881 (b) of this chapter, as applicable.

(3) Except as provided in subparagraph (5) of this paragraph, the owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to § 52.1881 (b) of this chapter shall comply with the applicable compliance schedule in paragraph (a) (4) of this section.

(4) (i) The Owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) or process subject to § 52.1881 (b) of this chapter who elects to comply with an applicable optional emission limitation specified in § 52.1881 (b) of this chapter, shall notify the Administrator no later than 17 weeks after June 17, 1977 of the specific emission limitations selected. Failure to select applicable optional emission limitations shall result in the facility being subject to the single uniform emission limitation for all stacks at that facility specified in § 52.1881 (b). Notice received later than 17 weeks after June 17, 1977 shall be invalid.

(ii) The owner or operator of any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter shall notify the Administrator no later

than 17 weeks after June 17, 1977 of his intent to utilize either low-sulfur fuel including blended or washed coal or flue gas desulfurization to comply with the requirements of said regulation.

(iii) Any owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter who elects to utilize low sulfur fuel including blended or washed coal to comply with the requirements of said regulation shall take the following actions with respect to that source no later than the date specified:

(A) 17 weeks after June 17, 1977: Submit to the Administrator a projection for ten years of the amount of fuel by types that will be substantially adequate to enable compliance with § 52.1881 (b) of this chapter, as applicable.

(B) 32 weeks from June 17, 1977: Submit ~~data~~ demonstrating the availability of the fuel ~~meeting~~ the requirements projected in subparagraph (a) to the Administrator.

(C) 36 weeks after June 17, 1977: Submit a statement to the Administrator as to whether boiler modifications will or will not be required. If modifications will be required, submit plans for such modifications.

(D) 50 weeks from June 17, 1977: Let contracts for necessary boiler modifications, if applicable, and notify the Administrator in writing that such action was taken.

(E) 60 weeks after June 17, 1977: Initiate on-site modifications, if applicable, and notify the Administrator in writing that such action was taken.

(F) 118 weeks from June 17, 1977: Complete on-site modification, if applicable, and notify the Administrator in writing that such action was taken.

(G) 122 weeks from June 17, 1977: Achieve final compliance with the emission limitation of § 52.1881 (b) of this chapter, as applicable, and notify the Administrator in writing that such action was taken.

(iv) Any owner or operator of any stack venting any fossil fuel-fired steam generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter who elects to utilize flue gas desulfurization to comply with the requirements of said regulations shall take the following actions with respect to the source no later than the date specified.

(A) 17 weeks from June 17, 1977: Let necessary contracts for construction and notify the Administrator in writing that such action was taken.

(B) 61 weeks from June 17, 1977: Initiate on-site construction and notify the Administrator in writing that such action was taken.

(C) 145 weeks from June 17, 1977: Complete on-site construction and notify the Administrator in writing that such action was taken.

(D) 156 weeks from June 17, 1977: Complete shutdown operations and performance test on source, submit performance test on source, submit performance test results to the Administrator and achieve final compliance with § 52.1881 (b) of this chapter, as applicable.

(5) (i) None of the preceding subparagraphs of this paragraph shall apply to any owner or operator of a source which is presently in compliance with the applicable subparagraphs of § 52.1881 (b) of this chapter.

(ii) Any owner or operator of a source capable of emitting 100 tons of sulfur dioxide per year from all stacks at any facility who is presently in compliance with the applicable subparagraphs of § 52.1881 (b) of this chapter shall so certify to the Administrator by four weeks from June 17, 1977.

(iii) Any owner or operator subject to a compliance schedule in this paragraph who elects to achieve compliance by means not covered by this paragraph may submit to the Administrator no later than six weeks from June 17, 1977, a proposed alternative compliance schedule. For process equipment subject to applicable subparagraphs of § 52.1881 (b) of this chapter no such compliance schedule may provide for final compliance after the final compliance date in subparagraph (2) of this paragraph. For any stack venting any fossil fuel-fired steam-generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter,

which will utilize low-sulfur fuel including blended or washed coal to comply with the requirements of said regulations, no such compliance schedule may provide for final compliance after final compliance date in subparagraph (4) (iii) of this paragraph. For any stack venting any fossil fuel-fired steam-generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter, which will utilize flue gas desulfurization to comply with the requirements of said regulations, no such compliance schedule may provide for final compliance after the final compliance date in subparagraph (4) (iv) of this paragraph.

(iv) Any owner or operator of any process equipment subject to applicable subparagraphs of § 52.1881 (b) of this chapter who submits an alternative compliance schedule pursuant to § 52.1882 (c) (5) (iii) of this chapter shall remain subject to the provisions of § 52.1882 (b) (2) of this chapter until the alternative schedule is approved by the Administrator.

(v) Any owner or operator of any stack venting any fossil fuel-fired steam-generating unit(s) subject to applicable subparagraphs of § 52.1881 (b) of this chapter who submits an alternative compliance schedule pursuant to § 52.1882 (b) (5) (iii) of this chapter shall remain subject to the provisions of § 52.1882 (B) (4) of this chapter until the alternative schedule is approved by the Administrator.

(6) Nothing in this paragraph shall preclude the Administrator from promulgating a separate schedule for any source to which the application of the compliance schedules in paragraphs (d) (2) or (4) of this section fails to satisfy the requirements of § 51.15 (b) and (c) of this chapter.

[41 FR 36339, Aug. 27, 1976, as amended at 42 FR 27592, May 31, 1977]

## APPENDIX I

Relevant provisions of EPA Regulations appearing in 40 C.F.R. §§ 60.45 & 60.46 (1977) are as follows:

### § 60.45 Emission and fuel monitoring.

\* \* \* \*

(2) For a fossil fuel-fired steam generator that does not use a flue gas desulfurization device, a continuous monitoring system for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling and analysis under paragraph (d) of this section.

\* \* \* \*

(d) [Reserved]

\* \* \* \*

### § 60.46 Test methods and procedures.

(a) The reference methods in Appendix A of this part, except as provided in § 60.8 (b), shall be used to determine compliance with the standards as prescribed in §§ 60.42, 60.43, and 60.44 as follows:

\* \* \* \*



(4) Method 6 for concentration of SO<sub>2</sub> and

\* \* \* \*

(d) For Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately 30- minute intervals.

#### APPENDIX J

EPA's policy statement regarding dual sampling by sources of emissions in Ohio, 43 Fed. Reg. 6646 (Feb. 15, 1978), is as follows:

[6560-01]

#### ENVIRONMENTAL PROTECTION AGENCY [FRL 856-4]

#### ACCEPTABLE FUEL SAMPLING ANALYSIS METHODS FOR DEMONSTRATING COMPLIANCE BY SULFUR DIOXIDE SOURCES IN OHIO

United States Environmental Protection Agency (U.S. EPA) is publishing the following policy statement on an acceptable alternate method of demonstrating compliance with the federally promulgated Ohio Sulfur Dioxide regulation in response to requests from several sources in Ohio for clarification of what alternate methods would be acceptable. See 40 CFR § 52.1882 (a) (5) and (b) (5).

The Ohio implementation plan regulation for the control of sulfur dioxide (SO<sub>2</sub>) emissions (40 CFR 52.1881, 41 FR36324 as amended by 41 FR 52455 and 41 FR 27588) requires that sources emitting 100 tons or greater of SO<sub>2</sub> per year which are in compliance with the regulation's emission limitation must certify that

fact of compliance to the Administrator. 40 CFR 52.1882 (a) (5) and (b) (5). Compliance is required to be demonstrated through stack emission tests performed pursuant to the procedures specified in 40 CFR 60.46. While the regulation does not provide for demonstrating compliance by methods other than those specified in 40 CFR 60.46, the Agency has determined that for fossil fuel-fired steam generators certain fuel sampling analysis methods provide an acceptable alternative method and therefore may be submitted by Ohio SO<sub>2</sub> sources to U.S. EPA to demonstrate compliance.

Specifically, coal analysis conducted in accordance with ASTM method D3176 based on a twenty-four (24) hour period of fuel average or other equivalent methods approved by U.S. EPA in writing may be submitted by such Ohio sources to U.S. EPA to demonstrate compliance. Thus an owner or operator of a fossil fuel-fired steam generator may certify compliance by demonstrating through fuel analysis results based upon twenty-four (24) hour fuel averaging that the SO<sub>2</sub> emissions from the source will not exceed the applicable emission limitations 40 CFR 52.1881 (b).

The use of fuel sampling analysis methods to demonstrate compliance is intended to eliminate the necessity of conducting a stack test on every emitting source in Ohio. However, acceptance by U.S. EPA of compliance certifications based on fuel analysis does not preclude the Administrator from requiring stack tests at a later time pursuant to Section 114 of the Clean Air Act or initiating enforcement actions based upon the results of subsequent stack tests.

Dated: February 9, 1978.

George R. Alexander, Jr.  
Regional Administrator

[FR Doc. 78-4176 Filed 2-14-78; 8:45 am]

## APPENDIX K

## OPINION

(United States Court of Appeals  
For the Sixth Circuit)

Cincinnati Gas & Electric Co.; Columbus & Southern Ohio Electric Co.; Dayton Power & Light Co.; Ohio Edison Co.; Ohio Power Co.; Shell Oil Co.; Austin Powder Co., E. I. duPont de Nemours & Co., Petitioners, v. Environmental Protection Agency and Douglas M. Costle, Administrator of the Environmental Protection Agency, Respondents.

Nos. 76-2090, 77-1367; 76-2232, 77-1361;  
76-2241, 77-1357; 76-2278

Petitions for review of action of the Administrator of the Environmental Protection Agency.

(Decided and Filed June 29, 1978.)

Before: PHILLIPS, Chief Judge, EDWARDS and PECK, Circuit Judges.

EDWARDS, Circuit Judge. This opinion deals with certain additional issues presented in 23 industry petitions covering 32 major power and industrial companies in Ohio objecting to the United States EPA's plan for control of SO<sub>2</sub> pollution in Ohio. These additional issues concern only point sources of SO<sub>2</sub> pollution in Ohio's rural areas or areas with complex terrain. This opinion should be read as supplementary to the opinion of this court dated February 13, 1978, *Cleveland Electric Illuminating Co., et al. v. Environmental Protection Agency, et al.*, 572 F.2d 1150 (6th Cir. 1978).

Our focus herein is upon the following petitioners and the designated facilities belonging to them. These petitioners protest certain features of the United States EPA Model (MAXT-24) employed for predicting plant pollution in rural and complex terrain areas:

Nos. 76-2090, 77-1367:

Cincinnati Gas & Electric Co., all facilities (Hamilton & Clermont Counties).

Columbus & Southern Ohio Electric Co., all facilities (Athens, Coshocton, Pickaway Counties).

Dayton Power & Light Co., all facilities not covered by opinion dated February 13, 1978 (Adams County).

Ohio Edison Co. (Jefferson County) Sammis Plant only.

Ohio Power Co., all facilities (Washington and Morgan Counties).

No. 76-2278:

E. I. duPont de Nemours & Co., all facilities (Hamilton County).

Nos. 76-2232, 77-1361:

Shell Oil Co., all facilities (Washington County).

Nos. 76-2241, 77-1357:

Austin Power Co., all facilities (Vinton County).

The MAXT-24 model (Second Maximum 24-Hour Dispersion Model with Terrain Adjustments) is designed for use in predicting SO<sub>2</sub> pollution resulting from single sources located in rural areas. Unlike the RAM model employed in urban areas, which we dealt

with in *Cleveland Electric Illuminating Co., supra*, MAXT-24 does not provide estimates of comparative contributions to total SO<sub>2</sub> pollution from a number of point sources. The MAXT-24 model treats each point source as an isolated problem, and only general background SO<sub>2</sub> pollution data are added into the formula.

In other respects the MAXT-24 model strongly resembles the RAM model.<sup>1</sup> Thus, like RAM, MAXT-24 starts with a solid ascertainable data base, namely, the established design capacity of the power or stream generating plants in question related to the sulfur content of the fuel used by such plants. Emissions data are developed from these factors. Subsequently, stack height, wind, weather, and terrain data are added. Like RAM, MAXT-24 employs a Gaussian plume formula and assumes vertical and horizontal dispersion of the pollution plume. It employs the Pasquill-Gifford stability classifications and coefficients.

Like RAM, the MAXT-24 model was designed by United States EPA largely as a result of industry criticism of the use of rollback modeling. As was true in relation to the RAM results, the results of use of MAXT-24 were generally less strict than those

<sup>1</sup> See *Cleveland Electric Illuminating Co., supra*, Section 3, 572 F.2d at 1160-64.

contemplated by the 1972 and 1974 Ohio EPA SO<sub>2</sub> regulations.<sup>2</sup>

Indeed, the comments this court made in *Cleveland Electric Illuminating Co., supra*, in Section 3 of the opinion are largely applicable to EPA's adoption of

<sup>2</sup>The following summary is drawn from *Cleveland Electric Illuminating Co., supra*, Appendix A, 572 F.2d at 1165-74:

US EPA 1976-77 MAX regs are:	Ohio EPA		
	1972 regs for:	1974 regs for:	
1. less strict than	19	16	of petitioners' facilities <sup>1</sup>
stricter than	1	5	P
ambiguous <sup>2</sup> compared with	3	2	"
2. less strict than	31	27	of Ohio counties modeled entirely with MAX
stricter than	3	6	"
ambiguous <sup>2</sup> compared with	5	6	"
3. less strict than	38	32	of Ohio counties in which MAX was employed
stricter than	3	6	"
ambiguous <sup>2</sup> compared with	12	15	"

<sup>1</sup> Including facilities to the regulation of which petitioners do not object.

<sup>2</sup> I.e., stricter for some stacks or facilities and less strict for others; or employing different units of measurement, rendering comparison impossible.

The 1972 Ohio EPA plan was submitted to United States EPA on January 30, 1972, but was "withdrawn" by the Governor of Ohio on August 27, 1972. The 1974 Ohio EPA plan was submitted to United States EPA on September 22, 1974, and was withdrawn on July 16, 1975. See *Cleveland Electric Illuminating Co., supra*, 572 F.2d at 1156.

MAXT-24 and we cite and rely on said Section 3 in holding that in general (and with one exception noted below) the EPA's adoption and use of the MAXT-24 model is not arbitrary or capricious and, like the use of the RAM model, must be affirmed by this court.

Despite the discussion above, we are not certain that any of the petitions we deal with in this opinion seriously disputes the general validity of the MAXT-24 model. What these petitioners clearly do contend is that the MAXT-24 model results are badly skewed to their great economic disadvantage by 1) the Class A assumption employed to estimate pollution dispersion in the least stable wind condition, and 2) the failure of EPA to employ the half ground displacement theory in estimating pollution impact on hilly terrain.

#### I THE CLASS A ASSUMPTION ISSUE

The MAXT-24 model makes use of a set of six coefficients for determining plume dispersal. The classes of coefficients employed were based upon six different weather conditions. The term Class A is employed to describe both the least stable weather condition and the set of assumptions which is based on the most direct and quickest impact of the pollution plume upon ground level with the least prior dispersal.

The six Pasquill-Gifford coefficients employed in MAXT-24 are derived from a Nebraska study made in the 1950's and are referred to by United States EPA as "time-tested." What this defense appears to ignore, however, is that petitioners in this instance (contrary to the general attack upon the six coefficients employed in RAM) are not objecting to the use of the coefficients,

they are attacking the accuracy of one set of them — the Class A set associated with "gusty winds." Specifically they claim that the Class A assumption is fallacious in that it assumes a longer period of downward draft than occurs in fact and fails to make allowance for the lateral dispersal which would accompany such a vertical wind at the point of impact.

The lead brief for the utilities presents the case thus:

*In all modeling of rural power plants, EPA utilized dispersion coefficients under Class A stability conditions which have no support in data, which have been repudiated by most modelers and which are demonstrated inaccurate by this record. As applied to this rulemaking, this seemingly simple assumption is exceedingly important because, for almost 1/3 of the power plants in Ohio, it was the determining factor in establishing emission limits.*

*The meaning of "Class A."*

Diffusion models can account for thousands of bits of data. Most important are meteorological data of which stability classes are an aspect.

Specifically, stability classes are categorizations of the atmosphere's ability to disperse plumes. These classes are divided into six categories ranging from extreme dispersion of plumes (Class A) to minimum dispersion (Class F). Under Class A, a plume is assumed to disperse very rapidly to the ground level before there is any substantial dilution. This, in turn, leads to predictions of high ground level concentrations. The fundamental issue, therefore, is whether the Class A assumption describes the manner in



which plumes disperse at rural power plants and whether the phenomena it depicts really occur.

Brief of Utility Petitioners at 31-32 (emphasis in original).

Petitioners then detail the results of three separate studies which they claim attack and undermine the validity of the Class A coefficients, and generally urge substitution of Class B coefficients. These studies are the privately financed study by Enviroplan, Inc., a similarly produced study by Smith-Singer Meteorologists, and a strongly critical report resulting from the Specialists' Conference of February 22-24, 1977, sponsored by United States EPA itself through the Argonne National Laboratory.

To this argument the EPA's response is as follows:

EPA properly determined that the "Class A" stability factors should continue to be used until new field data proved them incorrect.

Petitioners argue that EPA should have changed the dispersion coefficients used in the rural MAX (CRSTER) model for analyzing ground level concentrations caused by a source in very unstable weather, known as "Class A" conditions. In the remand comment period, the utility petitioners presented various theories that the model did not accurately reflect the way wind patterns in such weather conditions affect dispersion patterns and that therefore the model might be overestimating ground level concentrations for a 3-hour analysis. Petitioners argue that it was arbitrary or capricious for EPA not to accept theories presented in their comments.

EPA recognized in the STSD [Supplemental Technical Support Document] at 55 that there was a growing concern among atmospheric modeling scientists about the issue. EPA determined, however, that until further studies could be done to substantiate the theories, there was no experimental or field data to justify changing the dispersion curves or to determine how the dispersion equations should be changed. And since petitioners did not submit any data, no change could be made in the equations used. *Id.*

EPA Brief at 48-49.

We are, of course, aware that decision-making (particularly in this highly technical area) is the primary responsibility of the agency and not the responsibility of this court. See *Vermont Yankee Nuclear Power Corp. v. NRDC*, 98 S.Ct. 1197 (1978). As we said in *Cleveland Electric Illuminating Co., supra*:

Our standard of review of the actions of United States EPA is whether or not the action of the agency is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 305(a), 91 Stat. 775 (to be codified as 42 U.S.C. § 7607(d) (9) (A)). Thus, we are required to affirm if there is a rational basis for the agency action and we are not "empowered to substitute [our] judgment for that of the agency." *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402, 416 (1971). 572 F.2d at 1161.

On this present record we conclude that United States EPA's employment of the Class A assumption in determining pollution dispersion under "least stable" wind conditions in rural areas and areas of complex terrain is not a rational decision and is arbitrary and capricious.

As we read EPA's position on this point, it is that no better solution has been proposed. This answer, however, ignores the Enviroplan and Smith-Singer studies. More importantly, it ignores the conclusions of the experts' conference convened by Argonne National Laboratory at United States EPA's own request.<sup>3</sup> The report of that conference suggested "elimination of the A curve and the use of the B curve for both A and B stability categories." See Report of the Specialists' Conference on the EPA Modeling Guideline, Feb. 22-24, 1977, Chicago, Illinois, at § 2.7.5: "Vertical Dispersion Estimates."

By pointing out this proposed solution, we do not mandate its acceptance by United States EPA. Our ultimate action on this score is simply to remand this issue to United States EPA for further study. This might result in the writing of a new record which supplies the now missing support for the use of Class A coefficients for the least stable wind condition in rural counties, or it might result in United States EPA's adoption of use of the Class B coefficients for the two least stable wind conditions, or it might result in a new record which supports a wholly new solution.

<sup>3</sup> This conference was initiated by United States EPA and one of the participants was the Director of EPA Region V, which Region includes Ohio. The conference occurred during the remand period of this litigation, and three months before the finally amended regulations were promulgated. We consider the Conference Report to be properly a part of the appellate record.

## II THE TERRAIN ADJUSTMENT PROBLEM

The original MAXT-24 model assumed that the pollution plume moves downwind in a straight line from a point determined by the height of the smoke stack plus plume rise ("effective stack height"). Under that assumption, if effective stack height is 600 feet and there is a hill 800 feet high downwind, a receptor site located 600 feet up that hill will therefore in theory receive the full impact of the pollutants in the center of the plume.

Petitioners' attack upon this set of assumptions is, we believe, best stated by the Shell Oil Co. brief:

The reference to "the effect of the terrain on the plume" is an easily understood concept. Since the wind which blows the plume toward a hill (terrain) *cannot blow through* the hill, it must blow up and over the hill. This effect causes all the *layers of air above the wind at ground level*, and hence the plume itself, to be carried up and over the hill rather than hitting directly into its side. A *widely recognized* means of accounting for such a situation, and one which EPA has used, is to incorporate mathematical changes in the model which reduce the receptor height by the one-half difference between stack base and receptor elevation and limit the approach of the center line of the plume to ten meters above the receptor.

Shell and its consultant, Enviroplan, recommended this change to U.S. EPA. Moreover, this change was supported in the modeling literature by two other independent experts — Briggs and Egan. Also, another

consultant, Environmental Research & Technology, Inc. ("ERT"), recommended the same adjustment in a report submitted to EPA during the comment period for Columbus & Southern Ohio Electric Co. See "A Technical Review of the U.S. EPA Ohio State Implementation Plan for Sulfur Dioxide," January 1977, prepared for C&SOE. (App. 210-213.) Indeed, this approach is so well recognized that EPA, Region II, approved its use in sustaining a revision of the implementation plan for Puerto Rico. See 40 Fed. Reg. 52410 (1975).

Brief of Shell Oil Co., at 19-20.

As to this argument, the EPA brief contains this comment and admission:

Contrary to petitioners' claims, EPA utilized available monitoring data wherever possible. As set forth in detail in both the Final and the Supplemental Technical Support Documents, EPA conducted validation studies of the dispersion model used to set emission limitations for isolated, rural power plants. See STSD at 53-55, and the FTSD at 27-34. The validation studies compared model predictions of SO<sub>2</sub> ground level concentrations to actual air quality monitor data. These comparisons indicated that for sources located on flat terrain, the correlation between monitor data and predictions was quite good with the model tending to underpredict, but that for power plants located on hilly terrain, the comparisons showed consistent overpredictions.

EPA Brief at 45-46 (footnote omitted).

The EPA brief then goes on to assert that certain adjustments have been made in the model "so that it could handle dispersion in hilly terrain more accurately," and then cited the Supplemental Technical Support Document at page 55. The STSD material referred to follows:

The validation studies which compared model predictions of SO<sub>2</sub> ground level concentrations to actual air quality monitor data indicated that in certain situations the model overpredicted the needed modification. The problem usually occurred when air quality monitors were at elevations higher than the top of the stack. To correct this, terrain data used in the model was limited in such a way that terrain features were always assumed to be no higher than the stack height of the source stack in question. This was deemed to be an appropriate adjustment because the validation study showed a high degree of correlation between model predictions and sample readouts from monitors positioned on terrain lower than stack height in elevation. When this assumption was mathematically incorporated into the model, the validation studies showed that the model accurately predicted the ground level concentrations observed by the monitors.

Petitioners proposed a different method for modifying the model to account for complex terrain situations, but the proposal is not based on any validation studies of the CRSTER model. The Agency has no way of determining if the proposal is a better modification to the model than the modification made by the Agency after

the validation studies. The Agency, therefore, has determined that the model does not need further modifications because of any information presented by the petitioners.

EPA Brief at 54-55.

While the record does not establish conclusively that this adjustment made by United States EPA in the remand period will prove a satisfactory solution to the problem posed, neither does the record offer evidence to the contrary. We note, of course, that United States EPA had disowned the apparent implication in its brief that it had made validation studies of this latest adjustment for hilly terrain. And, in fact, our holding on this issue should not be read as this court's rejection of petitioners' half ground displacement theory in favor of the United States EPA adjustment outlined above. There may well be occasion for the agency to continue to review this issue. All we hold is that on the present record, we cannot find that United States EPA's present terrain adjustment in MAXT-24 is "arbitrary or capricious."

For the reasons indicated above, the petitions of Dayton Power & Light Co. (Adams County facilities only), Ohio Power Co. (all facilities), Columbus & Southern Ohio Electric Co. (Coshocton County facility only), and Austin Powder Co. (all facilities) are remanded to the United States EPA for reconsideration of the employment of Class A coefficients in least stable wind conditions in rural counties.

All petitions referred to at the beginning of this opinion are denied to the extent that they attack the MAXT-24 model as to the terrain adjustment feature.

### III OTHER ISSUES

We also hold that there is no merit to objections based on failure to calibrate the MAXT-24 model (or failure to reject its results because of claims of overprediction as demonstrated by some monitor readings). See *Cleveland Electric Illuminating Co.*, *supra*, 572 F.2d at 1163-64, numbered paragraph 7.

Shell contends that its emission limitation should be expressed in terms of pounds SO<sub>2</sub> per hour rather than pounds SO<sub>2</sub> per million British Thermal Units. The Shell proposal would require the EPA either to assume that stack gas temperature and exit velocity (the important factors bearing on plume rise and thus ultimately on ground level SO<sub>2</sub> concentration) are relatively constant, or alternatively to monitor stack gas temperature and exit velocity. Clearly, EPA considers policing such a system to be an impossible task. EPA's formula, by contrast, requires only the use of fixed, easily ascertainable data — the plant's design-rated capacity. We regard EPA's choice of formula, which minimizes administrative costs while obeying the Clean Air Act's command to "insure attainment and maintenance" of national ambient air standards, 42 U.S.C. § 1857c-5(a) (2) (B) (1970),<sup>4</sup> to be within the range of the agency's discretion.

We have considered the other issues raised by Shell and find them to be without merit.

Disputes between petitioners and EPA concerning appropriate SO<sub>2</sub> background levels, emission data, or

<sup>4</sup> Newly recodified as 42 U.S.C.A. § 7410(a) (2) (B) (1977 Pamphlet).



other fact issues will not be decided by this court until completion of the administrative review of such issues which was suggested by this court and agreed upon by the parties.

Based upon what has been said by this court in *Cleveland Electric Illuminating Co. v. EPA*, *supra*, and in this opinion, and finding no other material issues, we dismiss the following petitions *in toto*: Cincinnati Gas & Electric Co., Shell Oil Co.

Final dispositions in the petitions of Columbus & Southern Ohio Electric Co., Ohio Edison Co., and E. I. du Pont de Nemours & Co. will be entered on resolution of the remaining issues therein.

## APPENDIX L

### ORDER

(United States Court of Appeals  
For the Sixth Circuit)

The Cincinnati Gas and Electric Company, et al.,  
Petitioners, v. Environmental Protection Agency and  
Douglas M. Costle, Administrator of the Environmental  
Protection Agency, Respondents.

Nos. 76-2090, 77-1367

(Decided and Filed June 29, 1978.)

Before: PHILLIPS, Chief Judge, EDWARDS and  
PECK, Circuit Judges.

On receipt and consideration of a motion for  
clarification of this court's opinion, dated February 13,  
1978; and

Believing that said opinion is self-explanatory, but  
understanding petitioners' desire for certainty, we  
reprint below the specific dispositive paragraphs of  
*Cleveland Electric Illuminating Co. v. EPA*, — F.2d — (6th  
Cir. 1978) (Nos. 76-2090 et al.), numbered in sequence  
of their appearance in the opinion.

- 1) The cases dealt with in this opinion<sup>1</sup> present the  
major general issues. Other individual cases, in  
addition to presenting one or more of the general  
issues, also present specific issues of fact. These  
are reserved pending a review of and reports on  
the factual disputes between the United States EPA  
and the individual petitioners.

<sup>1</sup> This decision dismisses the objections to the regulations  
that apply to the following facilities:

- (a) Cleveland Electric Illuminating Co. — all facilities.
- (b) Dayton Power & Light Co. — Montgomery County  
facilities only.
- (c) Ohio Edison Co. — Lorain County facilities only.
- (d) Toledo Edison Co. — all facilities.
- (e) The Timken Co. — all steam generating units.
- (f) White-Westinghouse Corp. — all facilities. (Although  
there was some confusion on this point in the  
briefs, the record makes clear that White-  
Westinghouse's Franklin County facility is subject  
to the RAM model. See EPA Final Technical  
Support Document at IV-57.
- (g) Standard Oil Co. of Ohio — Lucas County steam  
generating units.
- (h) Interlake, Inc. — all steam generating units.
- (i) Coulton Chemical Corp. — all steam generating units.

*Id.*, slip opinion at 2 (emphasis added).

\* \* \*

- 2) No other material issues are presented.
- 3) One petition pending before this court from the  
Northern Ohio Lung Association attacks United

States EPA's failure to promulgate a separate implementation plan for the "secondary standards" for the ambient air. This petition will be the subject of separate consideration.

- 4) *Similarly, this opinion does not govern any petitions where the RAM model was not used. We do not decide any specific fact disputes raised by any petitioner as to plants other than those treated in this opinion.*<sup>6</sup> Decision of these cases will follow.

<sup>6</sup> See note 1, *supra*.

- 5) For the reasons stated above the decision of the Administrator in imposing the SO<sub>2</sub> control plan is affirmed subject to the reservations indicated above.

*Id.*, slip opinion at 30-31 (emphasis added).

The petitioners' Motion to Clarify, filed February 27, 1978, states accurately that this court's opinion disposed of five issues, which it stated as follows:

- (1) The appropriateness of the use of RAM (raised in the joint RAM brief and incorporated by reference in the utilities' brief),
- (2) The claims for needed procedural safeguards of cross examination on remand (raised in the utility brief),
- (3) The economic and technical arguments (raised in the utility brief), and
- (4) The urban/rural designation issue (raised in the utility brief).
- (5) The urban dispersion coefficients used in RAM (raised in the joint RAM brief).

Subsequently, said petition lists the following five issues as unresolved:

- (1) Failure of U.S. EPA to utilize monitor data in regulation development (utility brief),
- (2) Improper use of Class A Assumption in the rural model (utility brief),
- (3) Improper terrain adjustment features to the rural model (utility brief),
- (4) Failure of EPA to correct background and data errors (utility brief), and
- (5) Invalidity of the plan for vagueness, and failure to consider sulfur-in-coal variability (utility reply).

Issues 2 and 3 are disposed of by this court's opinion issued this date in *Cincinnati Gas & Electric Co. v. EPA*, — F.2d — (6th Cir. 1978).

Issues numbered 1 and 5 above we deem disposed of by affirmance of EPA's employment of the RAM and MAXT-24 models and the discussion in *Cleveland Electric Illuminating Co. v. EPA*, and *Cincinnati Gas & Electric Co. v. EPA*.

Issue number 4 we consider to be fact questions which are subject to agreed on administrative review. See *Cincinnati Gas & Electric Co. v. EPA*.

For the information of these petitioners, and others, we call attention to the fact that by order dated February 9, 1978, the petition of the Northern Ohio Lung Association (No. 76-2282) was remanded to the United States EPA for further consideration. Additionally, as of today, an order is being entered denying the petition of the Ohio Mining & Reclamation

Association and the Ohio Coal Operators' Association, Inc. (No. 77-3290) because it seeks relief which can only be had from the Congress of the United States.

As of this present date, this court considers that the United States EPA control plan for all Mahoning and Summit County facilities belonging to certain petitioners in these cases is under voluntary re-evaluation by United States EPA due to factual disputes. As these and other fact disputes are resolved, stipulations for dismissal should be submitted promptly to this court. When factual disputes cannot be resolved, the parties should make every effort promptly to stipulate the disputed issue, or, failing that, to stipulate the opposing positions of the parties on the issue or issues.

Entered by order of the Court

/s/ JOHN P. HEHMAN  
Clerk

see

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